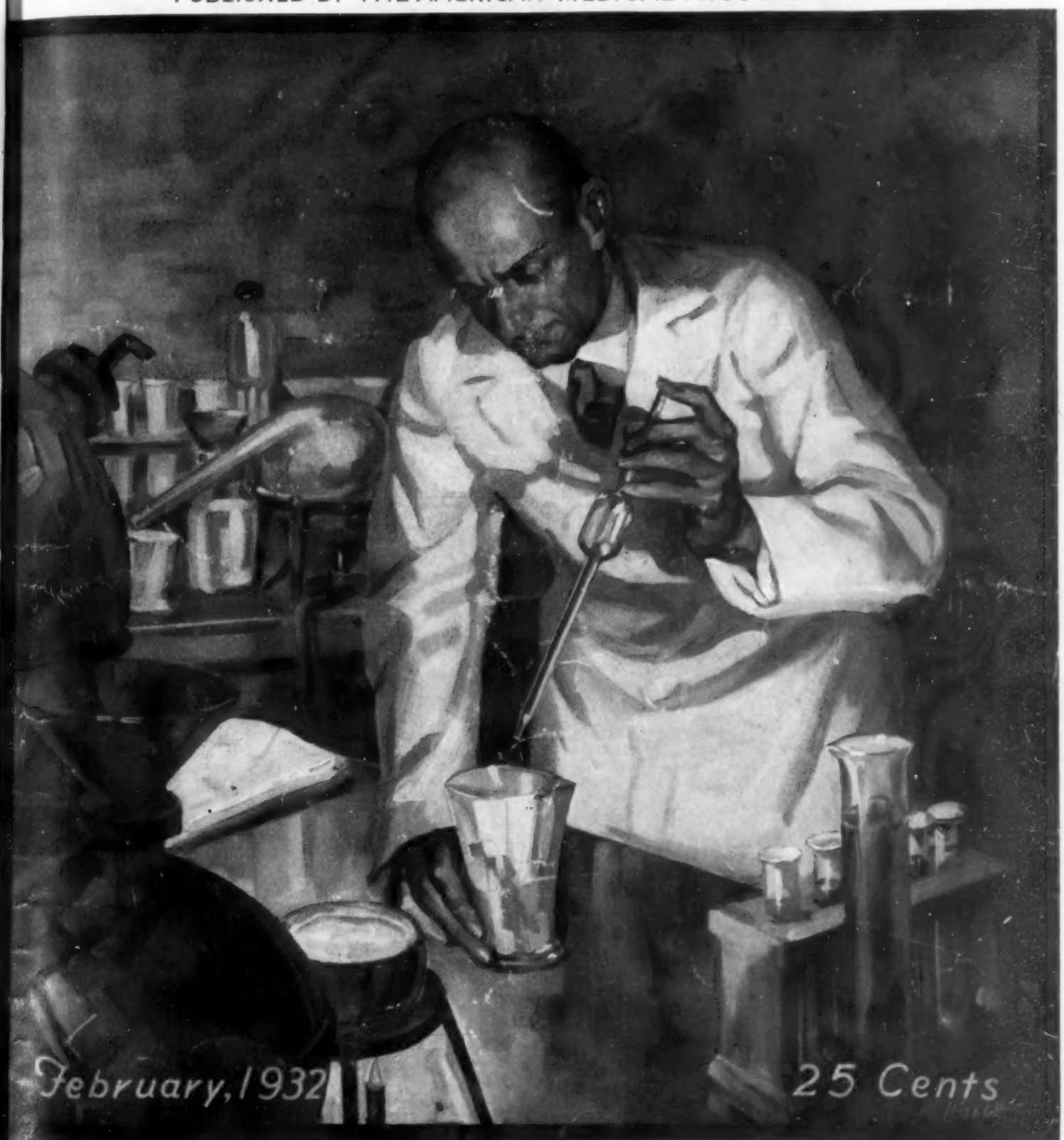
Medical Lib.
JAN 2 1932

# HYGEIA

## The HEALTH MAGAZINE

PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION




How Science Solves Crime

The Low-Down on High Blood Pressure

*This fine boy was fed on Mellin's Food and milk*

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ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

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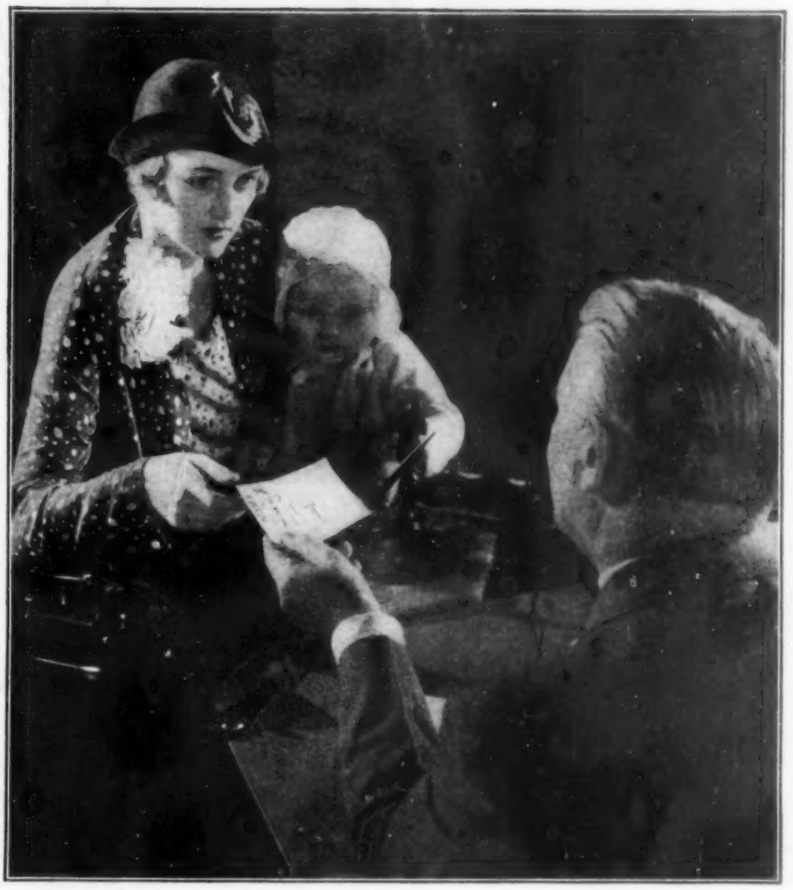
Mellin's Food Company — Boston, Mass.

HYGEIA, the Health Magazine, is published monthly by the American Medical Association, 535 North Dearborn Street, Chicago, Ill. Yearly subscription price, $3.00; for foreign postage add 50 cents. Volume 10, Number 2. Entered as second-class matter March 21, 1923, at the postoffice at Chicago, Ill., under the Acts of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1,103 Act of October 3, 1917, authorized March 21, 1923.

# "For Professional Services Rendered"—



Your doctor's prescription is not merely a scrap of paper; it is the sum total of modern medical science — applied to your particular case.

DURING times of financial difficulties there is likely to be a disposition to "economize on doctor bills." One is tempted to try home remedies, to listen to neighbors' medical advice and consult the physician only as a last resort.

Perhaps this thought comes to your mind as you sit in your doctor's office. You see him write a prescription in a few seconds' time, and when you get home you may say to yourself: "What value did I receive for the fee I paid the doctor? He dashed off this prescription in no time. I might have gotten along without that extra expense."

But that prescription represents much more than a piece of paper. A shoemaker or a blacksmith could have put ink to paper for much less. Do you know that on the subject of children's diseases alone, medical progress nowadays is so rapid that every year sees dozens of new textbooks and thousands of new contributions to the world's medical literature? How can anyone except your doctor keep up with it all?

Your physician's prescription makes available to you the benefits of years of preparatory education and medical schooling, years of hospital training, years of professional practice, of reading and study, of attending clinics and lectures, of discussing and comparing the experiences of thousands of other doctors—at an infinitesimal fraction of their aggregate cost. It is this priceless background that makes possible the transformation of a little scrap of paper into the prescription that saves a life or makes it more worth living.

*This advertisement has been reviewed and accepted for publication by the American Medical Association.*

BABIES SUPERVISED BY PHYSICIANS ARE BETTER BABIES

*This space is devoted to the interest of better babies by*
MEAD JOHNSON & COMPANY, *Evansville, Ind.*

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# AMONG HYGEIA ADVERTISERS

Progress is sometimes a surprisingly slow and painful process. You can readily call to mind many instances in which the human race has continued generation after generation, doing one thing in an awkward, inefficient, unsatisfactory manner. Suddenly, some one's mind labors and brings forth a new method of doing the same thing so easily, so efficiently, that every one of us at once says, "How perfectly simple! Why didn't some one think of that years ago?"

Some of the advertisements in this issue of HYGEIA are good illustrations of this point. For example, that of the Tek Toothbrush. Actually, the total amount of tooth surface is but a few square inches. Yet, most toothbrush designers have apparently looked upon the brushing of the teeth as a rather prodigious undertaking. "The bigger the better" seemed to be the criterion for judging a toothbrush in the early days, and even down to the present time, most brushes are constructed on a scale that is exceedingly large when you consider the requirements of the job. The designer of the "Tek" Toothbrush boldly departed from tradition, reduced the size of the brush and shaped it to make it comfortably acceptable to all portions of the teeth. It is simple but cleans efficiently.

The Universal Baby Cover Fastener is another example of an easy way to do something that formerly may have caused considerable trouble. It solves the problem of keeping the bed covering in place over the baby during these wintry nights. It simply consists of an easy spring clamp which firmly but gently grasps the covering, and an adjustable elastic which loops around the bedpost. If the child pushes the cover down, it is automatically pulled back and kept in position. The device is so inexpensive that, after the first couple of care free nights, you will undoubtedly feel that it has already been paid for.

Who would dare to think of improving or replacing such a time-honored article as the handkerchief? Yet, when you consider all aspects of the handkerchief, it certainly has its faults—the harboring of untold numbers of germs, the rebreathing of these germs with each application of the handkerchief, and the subsequent unpleasant job of washing. The Kleenex Company suggests that you use Kleenex Tissue as a substitute for regular handkerchiefs, particularly during colds and other respiratory infections. The Kleenex Tissue is used once and then discarded. No reinfection, no laundering problem.

One of the favored methods of helping to relieve a child suffering from croup has been the old-fashioned "croup kettle" and a newspaper cone. Considering that the kettle must be heated and at the same time be brought close to the child, the device is about as awkward as one could imagine. Now, the DeVilbiss Company, makers of all kinds of atomizers, have produced an electrical steam vaporizer which operates with the same simplicity, convenience and satisfaction as our other modern electric devices. You simply plug it into a socket at the bedside and produce the vapor where it is needed. If your physician prescribes "croup kettle" treatments for your child, by all means investigate the DeVilbiss Electric Steam Vaporizer.

Thanks to health education by the medical profession, by articles such as appear in HYGEIA, and by baby food manufacturers themselves, mothers of today realize the vital necessity of nursing their babies and of resorting to artificial feeding only when absolutely necessary. However, the young mother of today insists upon living her life in as normal a way as possible, even though she is nursing her baby. Moreover, she wants to maintain a trim, neat appearance and wear clothing as modish as other women. A great help in this respect is the Maiden Form Brassiere, which is designed to afford convenience, support and style to the nursing mother. It can be purchased in most department stores or direct from the announcement in this issue.

With the discovery of the various vitamins and the knowledge of their necessity to the human being, the proper supplementing of the diet through these vitamins becomes somewhat confusing and complicated. Years ago, babies were given orange juice. It supplies vitamin C. Then came cod liver oil, which gives them vitamin A and vitamin D. More recently, it has been found desirable to add the B vitamins to the diet of many infants and children. A rather simple way of making sure that your child is getting all of these various vitamins is by the use of Maltine with Cod Liver Oil, taken in orange juice. In this preparation, the oil is emulsified and therefore mixes readily with the orange juice, forming a very acceptable potion. Read about "The Five Vitamin Police" in the Maltine announcement.

School ventilation! Think back to the heating and ventilating facilities of school houses several decades ago—the country school with the red hot stove in the center; the old hot air system which sometimes worked and sometimes didn't; the advent of fan and forcing devices; "direct-indirect" systems; and a thousand and one contrivances to make schoolroom air healthful and comfortable for the children who are forced to live in it 9 or 10 months of the year. But now comes the Herman Nelson system of ventilation, which reduces the whole matter to 3 considerations—proper room temperature, proper humidity and proper air movement. The system takes care of these 3 factors in an automatic manner. If children in your schools are compelled to pass their time in an atmosphere that is not comfortable nor healthful, why not write for the free booklet regarding the Herman Nelson system of ventilation?

Because science has enriched our knowledge of nutrition in recent years, we have learned the value of incorporating adequate amounts of vegetables in the diet. Even small children know that vegetables are good food for them, and pulped or mashed vegetables are given to young infants. But good as vegetables are, they are made even better by the process used in preparing Hygeia Pure Strained Vegetables, which adds to them a definite amount of the essential vitamin D. These vegetables are produced by the makers of the Hygeia Nursing Bottle.

I have space to mention just one other good idea suggested by the advertisement of Re Umberto Olive Oil. Children as well as adults ought to have a certain amount of fat in the diet. With carbohydrate food so low in cost and often so appealing to the taste it is easy to overlook the fat requirement of the body. In addition, certain forms of fat are unpalatable to many people. Why not make wider use of a fine olive oil such as Re Umberto to round out the family diet with adequate amounts of fat. There are a thousand and one ways to use this product — salads, pastries, waffles, sandwich spreads, etc.

Charles S. Mohler

ADVERTISING EDITOR

# HYGEIA
## THE HEALTH MAGAZINE

*Published by the American Medical Association*
*Edited by Morris Fishbein, M.D.*

VOLUME 10 — FEBRUARY, 1932 — NUMBER 2

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*Harold K. Welch*

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## *Contributors to This Issue*

DR. WINGATE JOHNSON, author of last month's defense of doctors, gives the real low-down on high blood pressure. . . . A well known pediatrician has written the satirical poem, "Child Psychology—1932."

"Goiter," an article by DR. JOHN ROGERS, offers an instructive explanation of the thyroid gland and its relation to body needs. . . . In this number, the Lincoln anniversary month, appears the second chapter of the serial, "Lincoln and the Doctors" by DR. MILTON B. SHUTES. . . . LUCRETIA PENNY, a former contributor, presents a new set of characters in her story, "Two Tubs of 'Chiny Asties.'"

"Mesmerism Minus Mesmer" is a chapter of a book by the noted author STEFAN ZWEIG. The volume has caused a great deal of attention in Germany, and the English translation will soon appear in this country. . . . ELIZABETH SHAFFER contributes some salad recipes.

The Scientific Crime Detection Laboratory of Chicago is America's first serious venture in the scientific solution of crime. L. J. KAEMPFER, a member of the laboratory staff, has written for HYGEIA the first of several articles on modern methods of detecting crime to be contributed by workers in this laboratory.

DR. JOSEPH H. MARCUS again writes on the new-born. A third article will follow. . . . E. F. KOHMAN of the research laboratory of the National Canners Association, Washington, D. C., explains scientific processes used in the canning industry.

"When Do We Eat—and What?" has so interested WILSON D. WALLIS of the University of Minnesota that he is sharing his interest in a two-part article. . . . What to do when you visit the hospital is a problem; JEAN MCCALEB offers some worthwhile suggestions. . . . "Tumors of the Blood" continues the series on the blood and its diseases by DR. ROBERT A. KILDUFFE.

DR. ARTHUR J. CRAMP, director of the bureau of investigation of the American Medical Association, here exposes the activities of "Prof." Rudolph von Walden. . . . DR. HARVEY D. THORNBURG explains the severe effect colds and other nasal disturbances can have on small children in producing deafness. . . . Lord Lister is the inspiring subject of this month's contribution by DR. CLAUDE LILLINGSTON.

MILDRED WHITCOMB, assistant editor of HYGEIA, offers "The Three Weary Todds," a story for older children. . . . "Pity Patty Pitt" is a poem about a mumps confinement by DR. L. MASON LYONS.


*Published monthly by the American Medical Association, 535 North Dearborn Street, Chicago. Subscription price $3 a year. Single copies 25 cents. Foreign subscriptions $3.50 a year.*


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# The Health Hazards of Football

*An Editorial*

THE oldest recipe for health is moderation in all things. Books of advice to the public on the care of health have been available for some thousands of years. In all of them this advice is emphasized. The football season just ended was completed with a furore of attack in the press against the fatalities and serious accidents that had come to public knowledge. It must be remembered that football is played not only by trained professionals and by college athletes but also by high school boys and to some extent even by children. The serious results that come to public attention are obviously those affecting athletes of local, if not of national, fame. High school football receives little if any attention.

There seems to be no doubt but that the tendency of the game has been gradually toward increasing danger. It is the history of practically all human activity that opposite camps constantly contend toward certain ends. Thus, educators expose quackeries, and quacks find new methods of exploiting the public, which are again exposed, after which still other methods are found. The history of football seems to show constant effort on the part of the rules committee to eliminate dangers, and constant effort on the part of the coaches to discover new methods of attack or of defense that introduce new dangers. The old time flying wedge was abolished but a new and more dangerous flying wedge appeared following the kick-off. The old time mass play was removed and a new method of blocking appeared on the scene with the subsequent injury of larger numbers of players.

THE difficulty of ascertaining the exact nature of the hazards is obvious. In 1929, Dr. J. H. Burnett of Boston and F. J. O'Brien, associate director of physical education in the Boston public schools, secured information from 93 schools and, in 1930, from 106 schools having football teams in the state of Massachusetts. The outstanding item in these reports was the fact that there were no fatal injuries in this two-year period involving almost 10,000 boys. However, there were many injuries of which fractures of the nose and of the clavicle, or collar bone, were most frequent. The shoulder was the joint most often dislocated except for dislocations of the finger joints. Sprained ankles were common as were also injuries to the knee joints. They found no report of a fracture of the skull, the pelvis or the kneecap, but the current season apparently brought to light several cases of fracture of the spine among college teams. Injuries of the head with resulting concussion were fairly frequent. In most instances they were mild, resulting in temporary derangement with a loss of memory for the immediate past. Unfortunately, such cases are not easily diagnosed by the coach or by the captain in immediate contact with the player, and men have been known to go through several additional plays while subject to concussion without being removed from the field.

Dr. Burnett and Mr. O'Brien believe that football, as played in high schools today, is certainly worth while and that the personal liability has been reduced to a low figure. This conclusion is modified by the suggestion that there must be proper supervision, that play must take place on a good field with a doctor present to supervise all injured players and that schedules must be arranged so that the weather conditions will be satisfactory and so that unprepared teams will not be submitted to competition with teams fully trained and of immensely superior weight and skill.

THE chief difficulty in this situation seems to be the fact that a game obviously developed to provide simple exercise and healthful competition has entered the realm of big business. Whenever big business dominates a situation there is bound to be some sacrifice of the human equation. Football has come to be the source of income for the provision of all athletics. Hence it looms large in the university and high school budgets. Unless a team puts up a good show, unless players demonstrate the will to die if necessary in the provision of a perfect performance, crowds are dissatisfied, attendance lags and the athletic department goes into "the red."

What is needed is apparently a new attitude toward football. Athletic directors and coaches are the ones primarily responsible. To them players must look for protection against hazards to health and to life. That is a responsibility that cannot be lightly assumed. Once he assumes responsibility, it is within the power of faculties and boards of control to make sure that the coach lives up to it.

# The Low-Down on
# High Blood Pressure

*By Wingate Johnson*

THE twentieth century has witnessed the greatest effort yet made to obey the famous advice given more than twenty-four hundred years ago by Socrates—"Know thyself." Never in the world's history has so much interest been taken by the great public in the workings of the human body. The widespread propaganda of Freud and his disciples has made almost every man his own psychoanalyst. John B. Watson and his school of behaviorism have so simplified the study of human conduct that his ideas may be mastered by any bright high school boy or girl in three magazine articles.

*A 300 pound minister preaches on his favorite topic—temperance.*

Every well conducted newspaper has its health column from which information as to how to live, move, and maintain one's physical well-being may be acquired between the grape fruit or sauerkraut juice (according to one's favorite medical columnist) and coffee or cocoa. Life extension institutes and other more or less frankly commercialized medical organizations have spread the propaganda of periodic health examinations—a most worthy idea, if taken in moderation—until almost every American past the preschool age has become health conscious. Gilbert K. Chesterton, in his book, "What I Saw in America," quotes an American mother as boasting that her 6 year old son was "health-mad."

Even the manufacturers of a well known cigaret, having bought the endorsements of 20,679 of the 150,000 physicians in the United States with the cheap bribe of a carton of cigarets apiece, in weekly radio programs advise the air-minded audience to conserve their health by regular visits to doctors, and by smoking this particular brand of cigarets.

It is a moot point whether the average man gains or loses by having his thoughts so persistently directed toward the working of his own body, but it is too late now to divert his attention.

Perhaps the one symptom that for the last fifteen years or more has occupied first place in public dread is high blood pressure, or in medical language, hypertension. It is not more than twenty years since it became the medical fashion to take blood pressures; and it is a debatable question whether mankind has been the worse or the better for the discovery. According to the manufacturers of an expensive instrument for taking blood pressures, "The eminent physiologist Ludwig has said that the discovery of blood pressure was more important than that of circulation." On the other hand, Sir James Mackenzie, who has added more to our knowledge of the heart than any other man since Harvey discovered the circulation of the blood, attaches little importance to it. And I think it was Dr. H. A. Christian of Boston who said in a medical meeting that he was prepared to debate with anybody, anywhere, the affirmative of the query that the invention of the blood pressure apparatus has done mankind more harm than good.

Like most other debatable questions the truth lies somewhere between the two extremes. If hypertension is taken as a symptom instead of a disease in itself; if its importance and its danger do not become exaggerated in the mind of the patient; and if its treatment does not overshadow the treatment of the patient, it may be a valuable aid. If, on the other hand, an individual who is inclined to be hypochondriacal meets a doctor who exaggerates the condition

into a disease, who insists on taking the victim's pressure at frequent intervals and telling him just how high it is, and who punishes him with a too strict regimen of living, it were better for him that a millstone were hanged about his neck, and his misery quickly ended.

It is not within the scope of this article to elaborate the various theories as to the cause of hypertension. Many reasons have been suggested for the existence of a blood pressure above normal, but the last word has not yet been said. While no one cause can be given, a few factors most often associated with it probably play some part. These are heredity, emotional strain, overeating, overwork, certain diseases, and focal infections. Let us consider these separately.

Heredity is almost unanimously given first place among the causes of hypertension. In the present stage of our civilization, however, Mark Twain's remark about the weather applies here —"Everybody talks about it, but nobody ever does anything about it." Dr. Logan Clendening says that if one could be given the privilege of mating human beings as animals are mated, he could produce a race whose average life would be a 100 years or one whose members would die of arteriosclerosis at 20. But since such a dictatorship is out of the question, there is nothing to be gained by further discussion of this factor. The well known law of nature whereby opposites attract militates against Dr. Clendening's proposal. As to the other factors, however, it is possible to be less Calvinistic.

Emotional strain is perhaps the next most important factor. It includes such causes as unhappy family life, fear, anger, excitement, jealousy and perhaps, chief of all, anxiety over finances.

An uncongenial atmosphere in the home is doubly harmful, in that the unpleasant emotions engendered are themselves harmful and that they interfere with proper digestion. The wisest man in the world said, "Better a dinner of herbs where love is, than a stalled ox and hatred therewith," and again, "It is better to dwell in the corner of the housetop than with a brawling woman in a wide house."

Fits of temper always cause a temporary rise of pressure and often repeated tend to make it stay up. The celebrated John Hunter, one of the greatest surgeons of all time, suffered from anginal attacks for twenty years before he died. He is often quoted as saying, "My life is in the hands of any rascal who chooses to tease or annoy me," meaning that the rise of blood pressure thus caused might bring on a fatal attack. Great excitement serves the same purpose. More than one football and baseball fan has paid with his life for seeing a crucial game.

Fear is in a class by itself as a cause of high blood pressure. It is one of the most subtle of all evils. Often morbid fears are instilled in childhood that are never outgrown. One of the most wholesome trends in modern child training is the stress laid on the harmful effects of fear and the means by which it may be overcome or prevented. Some of the fears most often met are fear of financial reverse, of losing a position, of failing to make good in some undertaking, of committing the unpardonable sin, of disease and of dying. Even the fear of high blood pressure may be one of the most potent reasons for its existence.

One of the great objections to periodic health examinations is the danger of centering the patient's attention too much on himself. This is especially true if the custom of the so-called life extension institutes is followed, and the patient is given a detailed report, with elaborate pamphlets on the dangers of constipation, smoking, improper diet and the neglect of the teeth.

Let me digress long enough to set forth the inner workings of a life extension institute, as outlined by a former president of the American Medical Association in its official journal for Dec. 1, 1928. Such institutes appoint local examiners in various localities to attend the customers attracted by their extensive advertising propaganda. When an individual writes the institute for information as to how to have his life extended, he is referred to the nearest examiner, who fills an elaborate form with his findings and sends it to the home office. For his trouble he is paid from $3.50 to $5. For the task of looking over his report and sending stock letters and pamphlets of advice to the patient, the institute collects $25. Nor does this exhaust the possibility of gain for the institute. It is suggested that further tests should be made; these may be obtained at the home office for a sizable fee. Lest at this point some one is inclined to accuse me of sour grapes, let

*Most men pay dearly in health for profits made by marginal trading.*

me hasten to say that I had an invitation, which promptly went into the waste basket, to become the local representative of such an institute. Neither would I leave the impression that I do not believe in periodic health examinations. Most emphatically I do, in accord with nearly all up-to-date physicians. If, however, a man's family doctor is not capable of giving him a satisfactory overhauling and advising him as to all the special examinations he needs, then he should get another family doctor.

*Allow plenty of time to catch trains or for any task.*

Overeating refers more to quantity than to the kind of diet. A reasonable amount of fat is needed for padding and protection of certain organs, but excessive fat acts as a parasite on the body. It has been estimated that if all the blood vessels in a pound of fat were straightened out, they would total ⅝ mile. Thus 30 pounds of excess fat adds 25 miles to the circulation. This adds enormously to the burden on the heart, and also contributes much more waste matter to be eliminated by the kidneys. Any life insurance man will testify that the expectation of life of an overweight individual is far less than that of a normal or underweight man. Verily, a man's belt line is his life line. Moderation in weight is to be obtained more by temperance in eating than anything else, though exercise helps. Nor should this doctrine go so far as the utterly ridiculous and dangerous starvation that many women have suffered in order to get and to keep a boyish figure.

Overwork may be either mental or physical. Prolonged and intense use of either brain or muscles raises the blood pressure, and sufficient rest should be taken to allow the circulation to relax. If kept tightened up for long intervals, it has a tendency to stay at a higher level. This is particularly true if the work is accompanied by emotional strain. Such is the life led by the average doctor, and its results are shown by the fact that of 173 physicians whose obituaries were published in one month in *The Journal* of the American Medical Association, 100 died of diseases of the circulation, which is far more than the general average.

Certain diseases, notably syphilis, tend to cause arterial degeneration and hypertension. The improvements made within this century in the diagnosis and treatment of this disease should eventually greatly lessen its importance as a factor.

Focal infections, such as abscessed teeth, diseased tonsils, infected sinuses and gallbladders, were once thought to play an important rôle in producing hypertension, but with the passing of time their importance is being questioned. This is not meant to encourage anybody to continue to harbor pockets of pus anywhere in the system, for occasionally a high blood pressure is lowered markedly after the removal of such a focus; besides, it should be done for other considerations.

One condition which was long considered a chief cause but which is now practically abandoned is constipation and its consort, autointoxication. On the contrary, it is now believed that the opposite condition of low blood pressure is more likely to be associated with persistent constipation.

Caffeine, in the form of coffee, tea or certain soft drinks, undoubtedly raises the blood pressure for a while, and further predisposes to a permanently high level by stimulating both brain and muscle, especially the brain, to unduly prolonged exertion. As my former teacher of therapeutics, Dr. H. A. Hare, used to say, "Caffeine is a key to one's reserve energy, which should be saved for emergencies." The great popularity of certain soda-fountain beverages undoubtedly adds to the high-tension life of today. Although I voted for prohibition, it is my firm conviction that the unlimited sale of beer over the soda-fountain counter would be far less harmful to the American nation than the unlimited sale of caffeinated beverages.

### *Tobacco, Alcohol Need Not Be Indicted*

As to alcohol and tobacco, one is impressed with the free use of dogmatic statements of opinion and the lack of accurate observation. One cannot but regard as appropriate the words of old Omar:

> Myself when young did eagerly frequent
> Doctor and Saint, and heard great argument
> About it and about: but evermore
> Came out by the same door wherein I went.

If our pharmacologic teaching is correct, the immediate effect of a single dose of alcohol is to lower the blood pressure; and only after its long abuse had wrought changes in the kidneys or arteries would it be raised. Even this is a doubtful point. In passing, it may be observed that one who habitually uses the modern high ex-

plosive type of liquor dispensed by bootleggers is not likely to live long enough to develop hypertension.

As to tobacco, opinions have long varied. A few years ago I became interested enough in the subject to compare 150 smokers with an equal number of nonsmokers. Parenthetically, it took more than two years to complete the quota of nonsmokers, there being more than four smokers to every nonsmoker. According to my observations, the effect of tobacco smoking on blood pressure is negligible. It is interesting that Sir Armand Marc Ruffer, in his dissection of Egyptian mummies, found arteriosclerosis as common among them as among Europeans. He remarks that whatever it was due to, it was not due to tobacco.

Another observation worthy of mention in my study of tobacco is that, contrary to belief and expectation, the average weight of the smokers was slightly more than that of the nonsmokers, thus contradicting the advice recently broadcast to reach for a cigaret instead of a sweet.

### *Heredity First Among Causes*

The treatment of high blood pressure has largely been anticipated in the foregoing discussion of its causes. It is evident that the chief cause, heredity, must be accepted as philosophically as possible, for it has been fixed before the patient's arrival into the world. Much can be done, however, to lessen the influence of some of the other causes.

Emotional strain can be controlled to some extent. One of the first things a person should do when told that he has high blood pressure is to make up his mind that he will not let it ruin the rest of his life. He must adopt a philosophic attitude toward it, amend his habits so far as necessary and possible, and then forget it.

It is not a good idea to have the blood pressure taken too often, nor to press the doctor for the exact reading in figures. Anybody's pressure may fluctuate widely within a day, and even a well balanced layman who does not realize this can hardly help worrying if told that his reading is a few points higher than it was last week. Let the doctor worry over it, anyhow; that is what he is paid for.

The advice perhaps most often given and the least often taken, is "Don't worry." When one has learned how not to worry, he has learned the philosophy of life. Would that I were genius enough to formulate a universal rule for casting out the demon of worry, but every man must work out his own salvation. One can only offer a few bits of general advice.

Of prime importance is not to work against the pressure of time. Plan the day's work so it will not be overcrowded, even if something has to be left until tomorrow or delegated to some one else. Allow plenty of time for every task. For example, if it is necessary to catch a train, and it takes ten minutes to drive to the station, allow fifteen minutes, so there will not be a feeling of uncertainty in case of an unexpected traffic jam.

Far be it from a humble practitioner of medicine to offer any advice about finance, except that my professional observation has taught me most men pay dearly, from a physical standpoint, for profits made by marginal trading and for highly speculative dealing of any kind. I have long had a conviction that Freud was wrong in teaching that sex maladjustment was responsible for all the mental and most of the physical ills the flesh is heir to. Where sex has wrecked its thousands of happy homes, financial worry has destroyed its ten thousands. One of the greatest trials in the practice of medicine is the inability to relieve a condition when a diagnosis is made. A doctor would need the resources of a Rockefeller to treat successfully a large proportion of his patients, the prescriptions needed for them being checks for amounts varying from $5 to $50,000 or more.

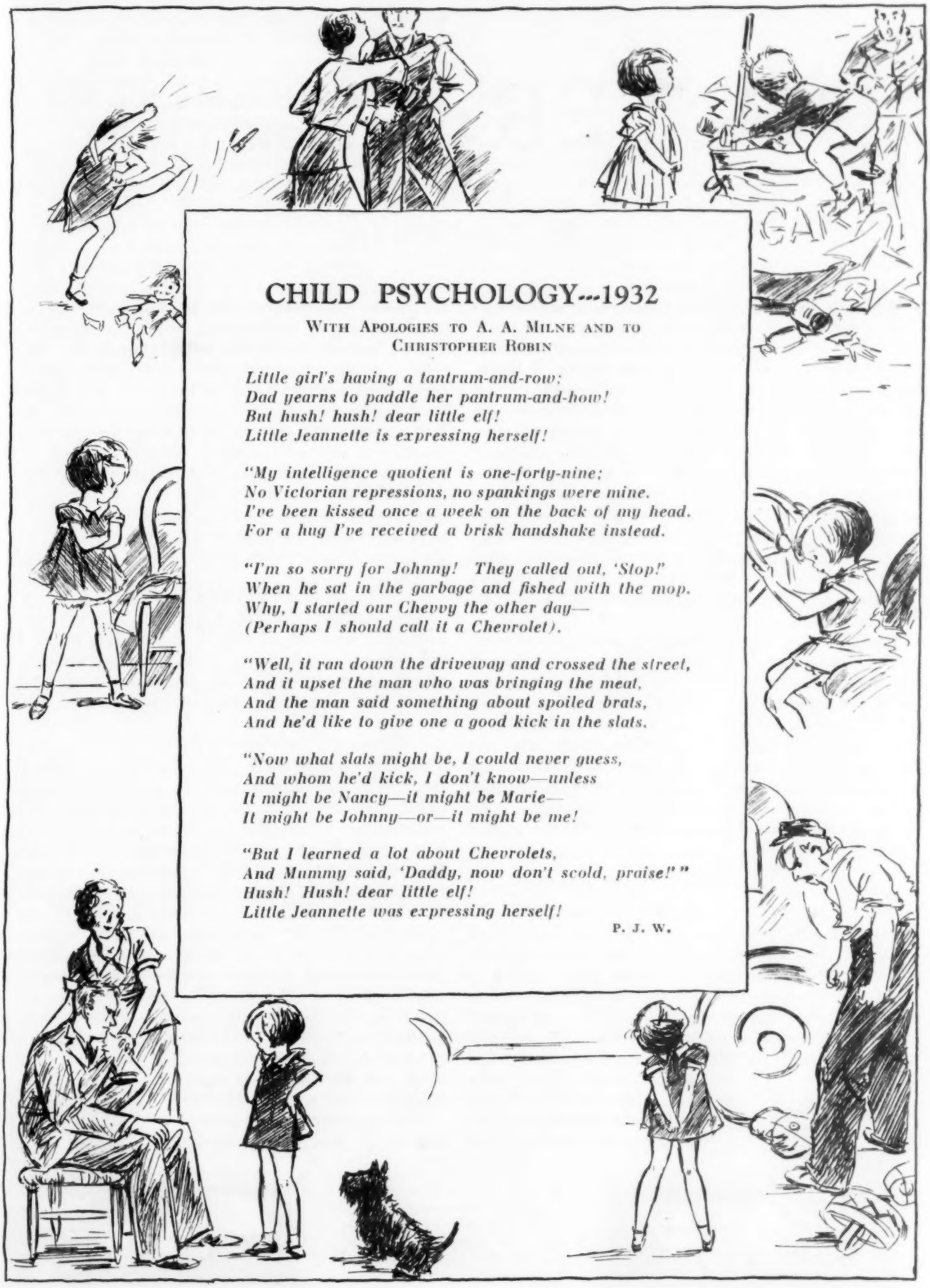
Fear and worry are closely akin. Undoubtedly fear is one of the most potent causes of unhappiness and of high blood pressure. One of the best prescriptions for any victim of hypertension or of morbid anxieties is that remarkable book called "Fear" by Dr. John Rathbone Oliver of Baltimore. In fascinating novel form, Dr. Oliver gives a clear, sensible discussion of fears—how they come into one's life and how they may be eliminated. For some years I have kept three copies of this book circulating among my patients.

### *Should Practice Temperance in Eating*

Overeating, as has been said, refers more to the quantity rather than to the kind of food, though rich, highly seasoned food, and an excess of meats, especially pork, are to be shunned. One should learn from one of the numerous reference tables what his weight should be and try to keep it within bounds. A word of caution here, however, is necessary. These tables are merely averages, and a man with a large frame and big bones should weigh more than another man of the same height but with a slender framework. It is not sufficiently emphasized in our Sunday schools that it is possible to be just as intemperate in eating as in drinking. Indeed, one objection to alcohol for the average man is its appetizing effect. Of a preacher who was famous as a valiant trencherman, whose weight was nearly 300 pounds, the remark was made that it was blasphemous for him to preach a sermon on temperance; yet it was his favorite topic. He died in middle age of apoplexy.

Work is not nearly as dangerous as worry. In fact, within reasonable limits it is one of the best antidotes for worry. My experience has convinced me

*(Continued on page 180)*



# CHILD PSYCHOLOGY---1932

WITH APOLOGIES TO A. A. MILNE AND TO CHRISTOPHER ROBIN

*Little girl's having a tantrum-and-row;*
*Dad yearns to paddle her pantrum-and-how!*
*But hush! hush! dear little elf!*
*Little Jeannette is expressing herself!*

*"My intelligence quotient is one-forty-nine;*
*No Victorian repressions, no spankings were mine.*
*I've been kissed once a week on the back of my head.*
*For a hug I've received a brisk handshake instead.*

*"I'm so sorry for Johnny! They called out, 'Stop!'*
*When he sat in the garbage and fished with the mop.*
*Why, I started our Chevvy the other day—*
*(Perhaps I should call it a Chevrolet).*

*"Well, it ran down the driveway and crossed the street,*
*And it upset the man who was bringing the meat,*
*And the man said something about spoiled brats,*
*And he'd like to give one a good kick in the slats.*

*"Now what slats might be, I could never guess,*
*And whom he'd kick, I don't know—unless*
*It might be Nancy—it might be Marie—*
*It might be Johnny—or—it might be me!*

*"But I learned a lot about Chevrolets,*
*And Mummy said, 'Daddy, now don't scold, praise!'"*
*Hush! Hush! dear little elf!*
*Little Jeannette was expressing herself!*

P. J. W.

# GOITER: ENLARGEMENT OF THYROID GLAND

*By John Rogers*

THE name "goiter" is commonly applied to every kind of thyroid enlargement. Only a comparatively few of these abnormalities are really serious. The great majority of them, when they begin, are entirely harmless or actually beneficial and can be interpreted as an alteration in the size of the gland to protect the individual. For all goiters probably originate as an enlargement—or a simple hypertrophy, as it is technically called—to produce more secretion than the gland of ordinary size can supply. It is in this stage that "an ounce of prevention is worth a pound of cure," and it is wise therefore to have some general understanding of what this important gland is supposed to do.

A gland is an organ designed to absorb or pick out of the circulation certain materials that it combines into a fluid. This fluid is poured out onto the external or into the internal surfaces of the body or directly back again into the blood. The thyroid pours its secretion back into the blood, and so is called an "endocrine," or internally secreting structure. There are several other glands that discharge their product in a similar manner and are likewise called endocrine.

### *Only Part of Gland Can Be Removed*

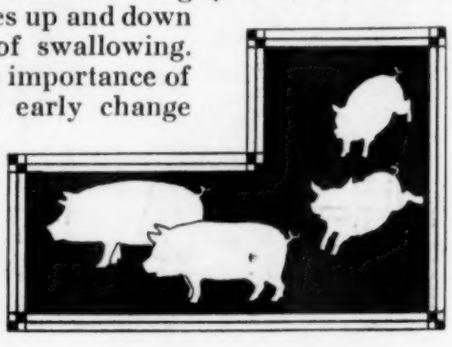
For a long time these organs were not regarded as of particular importance. But about 1880 Dr. Kocher in Berne, Switzerland, where operations for distressing goiters were common, found that after he had removed the entire organ his patients declined in health and finally perished. He thus discovered that the thyroid gland through its secretion was necessary for the maintenance not only of health but of life itself.

Shortly afterward, in 1895, a German chemist named Baumann discovered the presence of the element iodine in this gland, and for a long time it was thought to be the only place in the body where iodine existed. Even now, although we know the necessity of iodine for the normal functioning of the vitally important thyroid and its secretion, the details of this complicated biochemistry are still hazy. We only know that when iodine in the food and water intake is insufficient, we have at least one of the causes that leads to the initial hypertrophy of the thyroid, or the change that may develop into a disfiguring or serious goiter.

### *What "Simple Goiter" Is*

The words "simple hypertrophy" means a multiplication of all the elements that make up the structure of the gland. A corresponding change is often observed in a muscle subjected to constant use. It enlarges thus to compensate for what it is called on to do. The only apparent difference between this change in a muscle and the change in a secreting gland like the thyroid is that the muscle is under the control of the will, while the gland acts or secretes automatically. When the body needs its secretion, this need is expressed through the blood or through nerves over which we have no control, and the result is more secretion. Presumably, if this secretion is for any reason inefficient, as it evidently may be when, for example, the gland cannot obtain enough iodine, then the gland is forced to work harder. As a perfectly natural result it, like the muscle, enlarges to compensate for the bodily needs. This so-called primary or simple hypertrophy can be easily recognized as a soft swelling in the front of the neck that moves up and down with the act of swallowing.

The possible importance of iodine in this early change



*Michigan sheep and Montana hogs helped to establish the importance of iodine in the food and water supply.*

was probably first brought forcibly to general notice by the U. S. Department of Agriculture. It began with a complaint by some Michigan farmers that their sheep were suddenly losing their wool and otherwise becoming worthless. On investigation by the department experts, it was found that the sheep in addition to growing bald suffered from goiter. Knowing that the thyroid gland ought to contain nearly all the iodine in the body, the rations of the animals were examined. It was then found that the farmers, until shortly before the curious sheep disease broke out, had been feeding their animals an expensive sea salt, a material rich in iodine. Lately, however, they had substituted a much cheaper sodium chloride obtained from a mine in the neighborhood. On analysis, this salt was found to contain no iodine. The investigators, therefore, immediately added a little iodine in the form of sodium iodide to the rations of the sick sheep, and they promptly began to get well and again to grow the necessary wool.

Not long after this rather surprising success, a complaint was received from Montana that the pigs were getting thin and not having any young. On investigation by the Department of Agriculture, these pigs were found to have goiter and were receiving a cheap new ration which, on analysis, was found to contain little or no iodine. After the previous experience with the Michigan sheep it was a simple matter to add a little sodium iodide to the rations, and in a short time the pigs began to grow stouter and to produce satisfactory progeny.

### *Swiss Have Much Goiter*

These results soon became widely known and did much to establish the importance of iodine in the food and water supply and its relationship to the functions of the thyroid gland. It has been long recognized that inhabitants of some interior parts of the country, like those of Switzerland, were much more frequently afflicted with goiter than were people along the Atlantic seaboard. So, soon after the time of the brilliant research on the Michigan sheep and the Montana pigs, or about 1920, Dr. Marine took up the problem with the children in some of the Ohio public schools. Far too many of them showed an enlargement of their thyroid glands, and the water supply of these cities was known to contain little, if any, iodine. He, in conjunction with others, then proceeded to give one group of several hundred youngsters a small amount of this element once or twice a week throughout the school year. An equal number were kept under observation but without any treatment as controls. At the close of the period there were many less thyroid enlargements in those who had been treated than in those who had received no iodine.

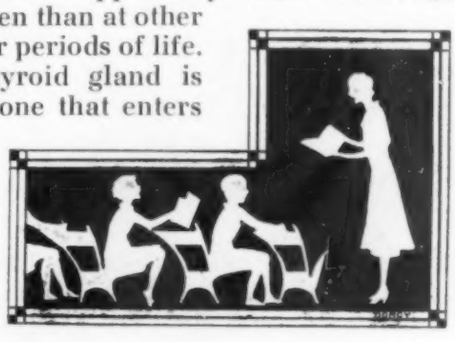
These experiments, which were widely published, showed conclusively that in districts in which iodine was scarce thyroid enlargement, or goiter, was prevalent, and if iodine was added to the usual food and water supply the thyroid enlargements became much less in evidence. In other words, a sufficient amount of iodine often prevented the development of thyroid enlargement and its possible disagreeable consequences. But it did not invariably do so, and after the enlargement appeared, iodine only occasionally made it shrink or disappear. There are, therefore, other factors in the problem than merely the absence from the diet of this one element.

### *Quick Metamorphosis of Tadpoles*

Shortly after Marine's experiments with the Ohio school children, Gudernatsch, a biologist at Cornell, published some curious and remarkable observations on the metamorphosis of tadpoles and its dependence on the thyroid gland. As is well known, the little black tadpoles found hereabouts in every pool of water in the spring gradually, in the course of two or three months, lose their tails and put out legs, and so turn into frogs, totally different sort of creatures. Gudernatsch placed a number of these little animals in a bowl and fed them small fragments of thyroid. The tadpoles almost immediately began to lose their tails and put out legs and became little frogs, and he thus could make a tadpole into a frog at practically any time.

These remarkable experiments, when applied to man, showed that the thyroid was an important organ in growth and development, especially in the change from childhood to adult life. The thyroid enlargement most frequently appears in the period of adolescence. It is a period of exceptionally rapid growth and development, when all the bodily forces promoting these changes are called on to be most active. To this metamorphosis the thyroid gland, through its secretion, is an undoubtedly busy contributor. It is apparently called on to do more work then than at other earlier or later periods of life.

But the thyroid gland is not the only one that enters



*Tadpoles fed on thyroid quickly lose their tails, put out legs and turn into frogs. School children in some districts are given iodine as a preventive of goiter.*

into the story. Thanks to a California scientist named Evans, we now know that the pituitary gland, lying at the base of the brain inside the skull, is probably equally important in the process of growth and development, for if this organ is artificially destroyed in the early life of a tadpole—and it is a highly skilled form of operation—the thyroid fails to develop, and so also does the tadpole. The pituitary and the thyroid are closely interdependent and have a great deal to do with the child's development. When one of these glands is inefficient the other is prone to become so. Fortunately, any change in the thyroid is easily recognized, because of its conspicuous position and its tendency to enlarge.

### *Without Thyroid, Child Is Dwarfed Imbecile*

That the thyroid is especially important in the growth and development of the brain has long been known, because of the occasional birth of an unfortunate child without a thyroid or with one of rudimentary and imperfect structure. This kind of a child fails to grow, and if it survives remains a dwarfed imbecile, or something analogous to a perpetual tadpole, and is called a cretin. Fortunately, this is a rare accident; but some of the milder forms of the disease or—more properly speaking—the deformity can be helped by what is known as thyroid feeding. In fact, by supplying the deficient gland artificially, an otherwise apparently hopeless intellectual condition can sometimes be changed to one that is almost or entirely normal. But this seems to depend on the amount and character of the thyroid gland with which the child is endowed.

Thyroid feeding was introduced about 1890 by an English physician named Murray. He had a patient who, in middle age, developed a curious disease that had been known as myxedema. This was associated with an atrophy or shrinkage of the thyroid gland and was accompanied by a curious waxy pallor and swelling of the face and by an increasing mental and physical weakness.

Murray, knowing that his patient had a failing thyroid gland, conceived the idea of feeding by mouth the fresh thyroid glands of sheep, which he obtained from the slaughter house. To everybody's surprise the patient obtained a complete recovery. Myxedema had hitherto been regarded as a slowly advancing and incurable malady. The cure was astonishing because, according to all the accepted rules of physiology, the feeding of sheep thyroid glands by mouth should have had an effect no different than the eating of so much ordinary meat. But it cured Murray's patient, and since then has saved the lives of other unfortunates.

Other glands have been fed by mouth to correct corresponding glandular deficiencies, but in no instance has the result been as successful as the feeding of thyroid for myxedema. Lately, however, the administration of liver for the usually fatal pernicious anemia has proved efficacious.

What is known about thyroid enlargements, or the possible early stages of goiter, and their cause and relief can now be briefly summarized. The purpose or function of the thyroid gland is somewhat comparable to that of an accelerator in an automobile. It promotes the production of energy and thus drives the human machine. It needs iodine to make its secretion effective, and if for this or any other reason the secretion is insufficient or ineffective, the thyroid is automatically compelled to do more work and so enlarges. These demands on the gland are the greatest during the period of most rapid growth and development. If the demands are greater than the gland of ordinary or normal size can supply, it enlarges or hypertrophies to compensate. The nature of these demands can be expressed as influences equivalent to those that produce fatigue.

These influences are often exerted by forced or excessive activity of the brain and are not often thought of as capable of causing fatigue. Consequently, if the first signs of thyroid enlargement appear—and they are easily recognized—and if an environment conducive to fatigue is not manifest, then nervous strains like too much study and too little sleep are to be considered. After youth has passed, an enlargement can occur under similar conditions of overstrain or fatigue.

### *Iodine Is Not a Goiter Cure-All*

It must be remembered that a lack of iodine is not the only cause for a weak or inefficient thyroid. Other organs that are known to support the thyroid may fail in their duty. Consequently, the administration of iodine does not make every thyroid efficient, and after the enlargement has occurred it seldom makes it shrink. Occasionally, if too much of this element is given, it may make the enlargement worse. Therefore, the best preventive treatment that home management can accomplish is to provide a hygienic mode of life. The possible later consequences of the primary soft enlargement belong in the province of the physician.

# Lincoln and the Doctors

By

*Milton H. Shutes*

*The love between Ann Rutledge and young Lincoln was a beautiful but short poem of spring flowers, hopes and tragedy.*

CHAPTER II

ON THE high banks of the Sangamon River there was perched the young town of New Salem, an ambitious but short lived venture of the Rev. John Cameron and his uncle James Rutledge. Here came, about Aug. 1, 1831, the stalwart, resourceful young Lincoln, an Ichabod in appearance; sad of eye but with a wonderful smile, poor in pocket and raiment but rich in personality and character. He came armed with a contract to build and manage a store for a Denton Offut, who already had sent him on the famous flatboat trip to New Orleans.

The stock in trade for the new store was scheduled to arrive in Beardstown, where the Sangamon empties its waters into the Illinois River, and Abe Lincoln was "fixing to go fetch" it overland to New Salem. Now there lived near the town along the river a Dr. Nelson, who felt himself being crowded by too many neighbors, it was said, and who was hankering for Texas, where the spaces were still wider and more open. So he arranged with our experienced flatboatman to help him raft his household goods down the river to Beardstown, where he boarded a river steamer for the South. It was no doubt a busy trip and gave Lincoln little opportunity to learn about doctors from this peculiar fellow. Though Abe surely had met and mingled with scores of representatives of the medical profession, this appears to be his first recorded contact with one of them.

The storekeeping business soon "winked out" and Lincoln was casting about for a new job when Black Hawk started a little war in northern Illinois and gave Lincoln an opportunity to become a federal employee. First he soldiered with the rank of captain and later he reenlisted as a private. While captain, his regimental surgeon was Dr. Jacob M. Early, but as private, medical care must have come from the same Dr. Early, now his captain. His only hardship seemed to consist in the burying of five scalped soldiers, and his only bloodshed was that from the bites of mosquitoes. He returned in three months to New Salem, fired with a political ambition that never ceased its urgings. Being now political minded, he tried for the state legislature; but he was insufficiently known in

his county and unseasoned in politics, and was defeated.

This first political reverse, added to his problem of making a livelihood, became a source of depression to him and a worry to his friends. This is apparently the first of many periods of mental depression so familiar to students of Lincolniana. Among his rapidly growing circle of friends (he possessed a genius for acquiring them) there was a Dr. Jason Duncan who practiced in New Salem for a short time and then removed to Warsaw, Ill. Duncan is the only doctor of medicine who has left any memoirs of the young Lincoln and is the authority for the statement of Lincoln's marked depression over his situation in the spring of 1833. But friends, headed by Dr. Duncan, maneuvered things so that by May 7, 1833, Lincoln was made village postmaster.

### *Lincoln Learns Surveying*

His small income was soon amplified by another stipend. The Black Hawk War had advertised Illinois, and as immigration increased there was an increased demand for surveying. John Calhoun, county surveyor, was in need of a deputy and the studious Abe was promptly appointed before he knew a rod from a line. In six weeks of close application, working all day and far into the night, he mastered the book on surveying lent him by Mr. Calhoun. This he did with the loyal help of that unsung hero of Lincoln's New Salem days, the pioneer schoolmaster, Mentor Graham. Now we find the two great men of the town much together, Graham the teacher and Lincoln the student. But these hours of work and study left him hollow eyed and ill looking. His friend, Dr. Duncan, offered warnings as well as help in his studies. He it was who introduced to Lincoln the poem that forever after has been considered his favorite, beginning: "Oh, why should the spirit of mortal be proud?"

Illustrating one of many ways by which young Lincoln made and cemented friendships is the story of his meeting with a young physician Dr. Charles Chandler from Woodstock, Conn., who in 1832 had entered one and a half sections of Sangamon land near the town later known as Chandlerville. According to an unwritten pioneer law, this gave him an option on 80 acres adjoining his own. A friend and neighbor from Connecticut was offered one half of these choice 80 acres by Dr. Chandler as an inducement to locate near by, but the friend wanted the whole of it and announced his intention of immediately driving to Springfield to enter it in the land office for himself. Dr. Chandler borrowed some extra currency, quickly saddled his horse, and started by a shorter and more familiar route to the county seat. When a few miles from Springfield, he overtook two men on horseback and while resting his horse explained his need for haste. One of the two men became indignant and offered to lend him his fresher mount, but Dr. Chandler with much appreciation of the offer declined it as unnecessary and hurried on to beat his selfish friend by one hour.

Some time later, Dr. Chandler, on sending for Calhoun's deputy to survey his lands, was surprised to find him the same man who had offered to swap horses. When years later he related this story to his daughter-in-law Mrs. S. L. B. Chandler, he closed with the statement, "I became a Lincoln man then and I have been one ever since." Mrs. Chandler adds that this was the beginning of a lifelong friendship between the two men and accords with the facts of Father Chandler's substantial aid in Lincoln's campaign for the presidency and his being his guest at the first inauguration.

Following Mr. Lincoln's term in Congress he remained in the East for a while campaigning for Zachary Taylor, the Whig candidate for the presidency. Dr. Chandler was able to contact Mr. Lincoln with Eastern friends and relatives of influence, especially his brother-in-law, the Hon. Linus Child, chairman of the Whig Central Committee, who personally introduced Mr. Lincoln at the Lowell, Mass., meeting; and more particularly with another relative, Henry Chandler Bowen, editor of the New York *Independent,* who became active in originating and promoting the invitation, in 1860, to Mr. Lincoln to deliver a lecture in New York City. This lecture became famous as the Cooper Institute Speech, which was largely instrumental in paving the way to the Republican nomination in Chicago.

### *Politics Becomes His Profession*

Another physician living in New Salem about 1832 was a Dr. Francis Regnier, who lived and died near the banks of the Sangamon and who had a large share of the county practice. He lived for a short time only in New Salem, moving 3 miles away to Clary Grove, a neighboring settlement, and finally to Petersburg. Dr. Regnier was a fat, eccentric and witty man. When his horse once ran away with him, he stuck his big leg out of his sulky against a sapling to check the horse and had his leg broken. While it was being set he kept the surgeon and helpers roaring with laughter at his stream of wit. There is no record of his contact with Lincoln in New Salem, but it is highly improbable that such a man would fail to be attracted by, and to, the story-telling Lincoln. That they were acquainted at this time may be inferred, however, from the fact that later Mr. Lincoln tried a lawsuit for Dr. Regnier.

Abe was liked by all of his acquaintances, so politics easily became his profession and a seat in the state legislature was a matter of waiting only for the next election. But during that time he was busy making friends, and fighting and

whipping all comers with pugnacious intent, even subduing the notorious Clary Grove gang. He studied, debated, performed feats of great strength, and fell in love, at first secretly at a distance and then, with a clear field ahead, openly and ardently.

The love between Ann Rutledge and young Lincoln was a beautiful but short poem of spring flowers, hopes, plans and tragedy. In the spring and summer of 1835 in central Illinois there were heavy rains followed by great heat. This, as the early settlers correctly believed, contributed to malaria, 'bilious fever," "brain fever" and typhoid fever. We now know that those weather conditions were favorable to the rapid breeding of mosquitoes and flies and they in turn were responsible for malarial and typhoid fevers. Ann probably suffered, as most of the settlers did, from malaria; but as some of the old contemporaries of New Salem asserted that she died of "brain fever" and some called it typhoid, we may assume that it was typhoid because so many others, including her father, died that summer. There was quinine to combat malaria but those who survived typhoid fever did so in spite of their doctors.

Ann's death was a tremendous shock to her young lover, then in the rainbow mists of his first great love, and it came when he was least prepared physically to meet it. He had been suffering from chills and fever every other day for some weeks prior to Ann's illness, but with the help of Peruvian bark, boneset tea, jalap and calomel he was able to help nurse the stricken, make calls with Dr. Allen and even to make coffins. Added to this strain came the gripping worry of Ann's illness and the final agony of her passing. He returned from the little Concord burial plot at Sand Ridge, we are told, bowed down with grief, and deserting the haunts of men he wandered about over the hills and through the woods and by the river banks. He neither ate nor slept, and again his friends became alarmed, this time for his reason.

### *Grief-Stricken Days*

His good friend Dr. John Allen, a wise man as well as a skilful physician, took him in charge. He conspired with the hospitable wife of Bowling Green, whose cabin still leans by the highway, to care for the distracted fellow. Aunt Polly took him in and mothered him until he became himself again, and until, as Dr. Allen ordered, he had passed three consecutive weeks without a chill.

There existed a mutual affection between Lincoln and this Dr. Allen that makes necessary a word concerning the doctor. He came to New Salem about 1831 and developed the largest practice in that general community. In professional ability he ranked with the eminent Dr. Gershom Jayne of Springfield and Dr. David Prince of Jacksonville. He was deeply religious; his medicine saddle-bags always lay at the end of his church pew ready for the next sick call. He was greatly respected for his strength of character and was none too popular with many because of his decided antislavery principles and his constant vigorous protest against the general drinking habits of the time.

Dr. Allen's shrewd method of collecting fees is worthy of note. Money was scarce among the early settlers so he accepted dressed hogs at the market price, cut them into lard and bacon, built a smoke-house of his own design, and in the spring shipped the cured products by river to St. Louis and New Orleans, where he obtained cash. In 1840, when New Salem failed, he moved 2 miles away to the new town of Petersburg and died there about 1860. It is safe to say that no man, at least no medical man, ever exerted a greater and deeper influence on Abraham Lincoln than this strong principled, shrewd physician.

### *A Half-Hearted Courtship*

We may now assume that to all outward appearance Lincoln was soon well in body and mind, for within the year we find him conducting a half-hearted courtship with Mary Owen of Kentucky, who was a visitor in the home of her sister, the wife of another friend of Lincoln's, Dr. Bennett Abell. Dr. Abell practiced medicine in the community for many years and, we may easily believe, added to Lincoln's favorable impression of doctors and their profession. In this community was a Dr. Newton Bennett at whose tavern young Lincoln often stayed but of whom there is no information other than that he was the first physician to locate in Petersburg.

In 1836 Lincoln himself recorded a period of illness lasting about a week, when he wrote from the state capitol, then at Vandalia, to Mary Owen at New Salem:

Vandalia, Dec. 13, 1836.

Mary:

I have been sick ever since my arrival or I should have written sooner . . . you recollect that I mentioned at the outset of this letter that I had been unwell. That is the fact, though I believe I am about well now, but that with other things I can not account for have conspired and have gotten my spirits so low that I feel that I would rather be any place in the world than here. I really can not endure the thought of staying here two weeks.

This is the third recorded period of marked depression that is to be so familiarly associated with him. Again illness, and Mary Owen this time, are factors in precipitating the depression.

*(To be continued)*

# Tumors of the Blood

*By Robert A. Kilduffe*

A PECULIAR group of diseases, because of their resemblance in some respects to malignant tumors occurring in the body in general, are sometimes spoken of as "tumors of the blood." These are the blood diseases affecting the leukocytes, or white blood cells, and are technically known as the leukemias.

While the blood is commonly thought of as a distinct and separate constituent of the body, in the last analysis it may well be regarded as a specialized tissue. Like all other body tissues it is subject to an orderly sequence of growth, death and replacement. When for reasons not always clearly ascertainable the tissues exhibit an overproduction of adult, normally formed cells, the result is in general spoken of as a tumor (literally, a swelling) or, because it is the result of the growth of new tissue, a neoplasm.

A similar condition may be found in the blood when for various reasons there is an acceleration in the production of leukocytes out of proportion to the demands for their normal replacement. When this takes place the usual term applied is leukocytosis, which means simply a greater than normal number of normal leukocytes in the circulating blood. This is a temporary condition occurring as an evidence of reaction to varying stimuli arising from the presence of disease.

When, in addition to excessive growth, it is found that the greater bulk of new body tissue is composed of young, embryonic cells, many of them showing evidence of imperfection in their production; and when, in addition, this new growth assumes unbounded proportions, disregarding all the usual laws of cell production and breaking through all the normal boundaries, there exists not merely a tumor, or neoplasm, but a malignant neoplasm or, to use a loose and general term, a cancer.

A similar state of affairs is sometimes seen in the blood, the outstanding characteristic of which is an extraordinary increase in the number of leukocytes. Instead of the usual from 7,000 to 10,000 leukocytes per cubic millimeter there may be as many as from 500,000 to 1,000,000 per cubic millimeter.

Because the presence of such enormous numbers of leukocytes may give the blood a peculiar pallor, the condition is called leukemia (literally, white blood), and because this overgrowth of leukocytes has some of the characteristics of malignant tumors in that many of the leukocytes are immature and imperfectly formed, these diseases have been called tumors of the blood.

There are, in general, two types of white blood cells normally found in the circulating blood, the granular leukocytes, so called because they contained granules, and the nongranular leukocytes.

Granular leukocytes are formed mainly in the bone marrow, being descended from parent cells known as myelocytes, or bone marrow cells. Nongranular leukocytes are called lymphocytes, because they are produced in a specialized tissue —lymphoid tissue, which is widely scattered in little islands throughout the entire body.

Blood tumors, or leukemias, may affect either of these two types of leukocytes so that there are two types of leukemia, the myeloid, or myelogenous, and the lymphatic.

In the myeloid leukemia it is the granular forms of leukocytes that are subject to overproduction, the predominant evidences of which are found in the bone marrow. In the lymphatic leukemias the granular leukocytes are not affected while the nongranular forms—lymphocytes—are present in enormous numbers and the lymphoid tissues by which they are formed show evidence of excessive activity.

As is true of malignant tumors in general, the cause of leukemia

is as yet unknown and its discovery awaits future investigation and experimentation.

One theory regards it as a peculiar form of neoplasm affecting the leukocyte-forming tissues while another suggests that it may be a peculiar form of infection. There are technical objections to both of these theories and neither has been proved.

While leukemia, fortunately, is a relatively rare disease, it affects all races and is more commonly encountered in men than in women. A similar if not identical condition is found in several mammals other than man and in birds, so that there is some hope that through the study of this disease in birds and mammals its cause and some satisfactory method of treatment may yet evolve.



Both forms of leukemia—myeloid and lymphatic—may be either acute or chronic, the acute forms running a rapidly fatal course within three or four months, while the chronic forms, although ultimately fatal, may persist for years, usually about five. Cases have been recorded having a duration of from ten to twenty-five years. Individuals differ widely.

While the presence of chronic myeloid leukemia is readily recognized on examination of the blood, the diagnosis is dependent in great measure on the ability of the physician to suspect its presence from its varied symptoms.

The main complaint that leads the patient to the doctor may be a swelling, a lump or a dragging sensation in the left side of the abdomen. Or sometimes it may be simply a loss of weight and strength, palpitation, digestive disturbances, or, although this is a relatively late manifestation, hemorrhages from or into various parts of the body.

In any event, on examination, the abdominal lump will be found to be an enlarged spleen often accompanied by an enlargement of the liver. With or without this, the absence of evidence to account satisfactorily for the other symptoms will lead to a blood examination when the characteristic findings at once make plain the nature of the disease.

### *Myeloid Leukemia*

Instead of the usual number of leukocytes the total count will show from 100,000 to 500,000 per cubic millimeter or more.

While this determines the presence of a leukemia, the type can be told only after the white blood cells have been stained and studied under the microscope. When such a differential count is made it is found that the extremely high total count is due to the presence of enormous numbers of granular leukocytes. When these are studied, not only are normal forms present but abnormal, immature forms (myelocytes) as well as many that are distorted and imperfect.

Such findings not only establish the presence of excessive leukocyte production but also the fact that the leukocytes are those manufactured by the bone marrow; hence the condition is a myeloid leukemia. Together with these findings there will be evidence of a progressing anemia.

Peculiarly enough, the progress of the disease may be interrupted by a spontaneous remission, which sometimes also follows an acute infection such as pneumonia. The blood picture may almost approach normal for a time, although examination of the blood by an expert will show the presence of myelocytes or immature leukocytes, even though the total leukocyte count is within normal limits.

As in myeloid leukemia, the onset of chronic lymphatic leukemia is insidious with, however, one early manifestation, the enlargement of the lymph nodes.

Lymph nodes are little islands of lymphoid tissue scattered throughout the body. They are usually along the path of the lymph channels to which, in some respects, they may be said to act as filters. While occasionally they reach such a size as to be regarded as distinct organs worthy of a specific name—as is the case with the tonsils, the spleen and those lymphoid areas in the small bowel called Peyer's patches—usually they are so small that they cannot be perceived by the touch.

### *Chronic Lymphatic Leukemia*

In chronic lymphatic leukemia these areas become distinctly enlarged and palpable but, as distinguished from their enlargement as a result of tuberculosis or of some other inflammatory condition, they are freely movable and not tender.

Enlargement of the tonsils may sometimes be so marked as to cause actual obstruction, and the glands in the neck and elsewhere may even become tumor-like masses. The spleen also is enlarged, though not so markedly as in myelogenous leukemia.

Here, again, examinations of the blood are required to clinch the diagnosis. As in the myeloid form, the total number of white blood cells will be greatly increased but when these leukocytes are studied under the microscope it is found that the increase is due to an overproduction of leukocytes of the lymphoid type,

*(Continued on page 147)*

JUST A DAY IN THE LIFE OF A COUNTY NURSE

By *Lucretia Penny*

# TWO TUBS OF "CHINY ASTIES"

MISS JACKSON stepped out of her roadster, pushed open a paling gate with its automatic closing device of a rusty plow point strung on a wire, and went up the fennel-bordered path to the Brackens' porch. She was wondering if her records in the office at the Court House wouldn't show that in her three years as county nurse she had visited the Brackens oftener than any other family. There had been the time when Mr. Bracken's hand was crushed while he was repairing a rock fence; twice Mrs. Bracken had been seriously ill with pneumonia, and for the last two years there had been Margaret, a singularly beautiful but somewhat frail baby.

*Miss Jackson Visits Her Namesake*

Mrs. Bracken was sewing a square of overall cloth over a hole in the screen door. She rose from her knees, pushed back a strand of colorless hair, and smiled as she offered Miss Jackson a chair near the home-made cradle in which Margaret was asleep under a cover of tobacco canvas.

"Well, how's everybody?" the nurse asked. "I'm out rounding up folks for Saturday's chest clinic and I thought I'd stop by, while I was near, and ask about my namesake."

"She's all right, I reckon," Mrs. Bracken replied unconvincingly. "She's been sort of fretty and she ain't gainin' none, but I reckon it ain't nothin' more than the weather we been havin'. Hot as it is a body can't feel like nothin'."

Miss Jackson lifted a corner of the canvas and looked down at the sleeping child. Damp, red-gold hair curled about a delicately lovely face.

"She's far too pretty to be named for me," Miss Jackson objected.

*"Ain't Gettin' Milk No More"*

The mother smiled, pleased at the tribute. "You always said that. I reckon me and Irv's such fools about her we wouldn't think no name was too good for her, but we ain't been sorry we named her what we did."

Miss Jackson straightened the canvas carefully. "Been drinking her milk all right?" she asked casually.

Mrs. Bracken shook her head. "We ain't gettin' milk no more."

"Oh, what happened to the cow?" ("I couldn't take the casualties among the cows more to heart if I were county veterinarian," Miss Jackson had once remarked.)

"Nothin'. We just ain't goin' over to Pappy's after milk no more."

Miss Jackson sighed silently. So she'd been too chesty about this family, had she? Here she'd been congratulating herself on the sensible routine the young couple was carrying out with

this first baby. Screens were kept mended, drinking water boiled, vegetables for the baby were cooked separately in order to escape the usual seasoning of red pepper and fat meat, and Mrs. Bracken had accepted with a minimum of questioning and backsliding a dozen regulations of which she had never heard until she met Miss Jackson.

"But we may get ourselves a cow after the 'Mato 'Sociation pays off," Mrs. Bracken offered hopefully.

"Next fall," Miss Jackson commented. "Margaret will be accustomed to the taste of coffee by that time. Sometimes it's hard to get them interested in milk again after they've been without it a few months."

### *A Matter of Personal Relations*

"Me and Irv and all Mammy's young ones and all his Mammy's come up on coffee mostly, but I'd a heap ruther Margaret didn't have to."

"Mind telling me what happened to keep you from going after the milk?" Miss Jackson asked. She knew that Mrs. Bracken had a stepmother, and she suspected difficulties in personal relations.

Mrs. Bracken's sallow face flushed. "Well, me and Miss Talithy had a fallin' out over her Chiny asties and my baby. It was two weeks ago come next Tuesday and I ain't been back. Margaret frets every day to go but I ain't aimin' to have her do it. I'd took my boiled fruit jar over after the milk like I always done and I come off so worked up I left the jar settin' on the steps."

"Well, those things happen," Miss Jackson remarkedly calmly.

Mrs. Bracken looked up in surprise. "Pappy took sides with Miss Talithy, and Irv took sides with me. Me and him reckoned you'd take sides with her 'cause you'd be so outdone about the baby's milk."

Miss Jackson shook her head. "I wouldn't take sides with anybody on as hot a day as this. I'm just resting and fanning myself and listening."

"Well, they wasn't nothin' to it at all, 'cept I don't aim to have nobody talk to my baby like Miss Talithy done. You know them Chiny asties she's got in them old tubs on both sides of her yard? One side she's got pink ones, and other side she's got purple."

Miss Jackson knew the asters, lavender and rose ones of a hothouse perfection. She had wondered whether it had been accident or magic that brought about their rare beauty. "Miss Talithy" had mowed her yard with a hand scythe, and had whitewashed her house in honor of their blooming, and once Miss Jackson had seen her at the neighborhood store disdainfully examining a roll of purple print.

"Ain't that there purple?" the storekeeper had asked belligerently.

"I never said it weren't purple," the shopper had replied coolly. "I said it weren't pretty. What I mean I want is a kinder Chiny astie purple."

"Yes," Miss Jackson nodded, "I know her China asters."

"Well, me and Margaret was over there and we was all settin' on the porch. Miss Talithy always has took on over Margaret same as she was her blood kin. She calls her 'Lithy's pretty baby' and makes a reg'lar spread over her every time. Well, we was over there and Margaret somehow never had paid no 'tention to the asties before, but that day she kinder commence to notice 'em. She was runnin' after the cat and she come down to where them astie tubs was settin' and she kinder bended over like she aimed' to pull some blooms off, and Miss Talithy yelled at her and she thought Miss Talithy was playin'. So then she broke off a whole handful and come runnin' up to me with 'em. Well, I sort of fussed at her and set her down on the porch. Well, we set there talkin' and Margaret edged off to the asties again. I called her back and she slipped off again. Four or five times she done that. Miss Talithy was settin' there like she was on a cucklebur chaircushion, and finally she went out and got Margaret and slapped her hands. Margaret commenced to cry, and Miss Talithy said, 'Well, what you need is a good lickin'.' With that I grabbed up the baby and started home. Miss Talithy hollered after me, 'You-all come when you can.' I said, 'You've saw the last of us you'll see till the frost kills them Chiny asties.' I meant it. If she thinks more of them old tubs of blooms than she does of my baby she can have her blamed old blooms."

*Said Miss Talithy, "Well, what you need is a good lickin'."*

"I suppose she's had asters before?" Miss Jackson asked with assumed indifference.

"Nome. She never had. I 'member 'fore ever I left home she ust to be always tryin' for a good stand of Chiny asties. Seem like her

grandmammy lived in one place all her life and had Chiny asties. Miss Talithy and Pappy moved pretty near every year—Pappy's always been a unrestless sort of a man—and sometimes they'd move too late to get seed planted, and sometimes it would be too dry or too wet or the ground wouldn't be fit for nothin'. I know once Miss Talithy had some right good niceturtiums; and once she had some petunies and moss roses in a tub. She tried to get Pappy to move 'em but he said he hoped he had somethin' better to move than tubs of red and blue weeds. Pappy's right short spoken that way. But every year

*The nurse saw that Miss Talithy had callers.*

Miss Talithy'd plant them Chiny astie seeds. I 'member one time her sayin' she wondered would her time come to die 'fore ever she got her some Chiny asties like her grandmammy's. Seem like Miss Talithy had a fool notion that once she got them Chiny asties she'd be satisfied if she never had nothin' else."

"And now she'll be moving off and leaving them, I suppose," Miss Jackson commented lazily.

"Nome, that's what's so funny to me and Irv. Seem like now she's got 'em Miss Talithy has turned spunkier. She told Pappy he had to stay where he was another year, that movin' around wasn't going to get him nowhere and that she was wore out on it. She said she aimed to stay in one place like her folks done back in her grandmammy's day. Pappy was sure took back. He ain't caught on yet that it's them asties, but me and Irv seen through it right now. Me and Irv ain't never had but the one fallin' out over where we'd move to, and that was the time I told him I wouldn't move up White's Creek where the road ain't fit for you to go in your car. I told him I never aimed to go nowhere where the baby'd be out of your reach; I'm too feared she might get sick."

"So with you it's the baby, and with Miss Talithy it's China asters," Miss Jackson said.

"How you mean it is?"

"Well, isn't that it?"

"You mean. . . . I guess you think it's sort of silly—my bein' so proud of how my baby looks, but she's mighty near the only pretty thing I ever had. Once when we lived over the other side of the river I had some awful pretty little ducks, but we moved off and Pappy wouldn't let me take 'em, 'cause we was goin' where there wouldn't be no water for 'em. . . . I guess everybody thinks I'm silly over Margaret."

Miss Jackson shook her head. "I've never thought so. She's the prettiest thing you'll ever have. Very likely the China asters are the prettiest things Miss Talithy will ever have. I just couldn't help thinking of them together."

The baby stirred, yawning softly. Mrs. Bracken pushed back the canvas. Long-lashed lids lifted from round blue eyes, fell slowly.

Mrs. Bracken smiled. "She always has to doze off again. She ain't never had her nap out till she's dozed off again. . . . Seem sort of funny to set asties up 'side of her."

Miss Jackson continued fanning herself with her hat. "Still, if with Miss Talithy it's asters—"

"Well, I reckon she's gettin' her fill of workin' with her old asties now. Margaret sure ain't killed none of her time this last week."

"A smart child like Margaret would learn so easily that the asters aren't to be broken. It isn't as if she were slow to understand things like that." Miss Jackson lifted the canvas and looked again at the child. "So she's lost weight, has she?"

The mother nodded.

"Too bad, but I suppose there's nothing we can do about it. She needed those pounds. I wish I knew a good substitute for milk, but I just don't. . . . If I'm to get over to Mrs. Truitt's and then back to town before dark I should be starting. That road isn't the best I ever saw.

*(Continued on page 182)*

# When You Visit the Hospital

By *Jean McCaleb*

"And what are you going to wear tomorrow?"

"Oh," said Martha, "I shall not bother to dress up; I'm just going to the hospital to see Cecile."

In spite of the bracing effect that bright dresses and new hats have on the sick, Martha's idea seems, alas, to be that of only too many hospital visitors. So let us state Rule I for callers on the sick: A pleasing, though not gaudy, dress and hat should be worn.

"After days and days of looking at starched caps and stiff white uniforms, can't you imagine what a real treat it was to see Mrs. Hamilton in her becoming spring hat, her stylish new shoes and a dress that made me think of a flower garden and a sunset, all in one?" exclaimed one convalescent.

Naturally, Mrs. Hamilton was always welcome.

As to gifts for the hospital patient, get books and magazines that are small and light, if possible, and see how thoroughly they are enjoyed. If some of our hefty magazines are an armful for a well person, it is easily understood how tiring they may become to a weak person who tries valiantly to hold them for any length of time. It is surprising, too, how easy it is to find any number of good stories, poems and articles in small magazines and books. Indeed, one man I know still insists he found the road to recovery when he began laughing over Oscar Wilde's "The Importance of Being Earnest," donated by an angelic friend.

Suppose you are permitted to take a friend some food. I still smile when I remember one of my presents—a simple dessert molded in forms of bunnies, fish, dogs and flowers! Some of you who have lived for days on colorless broth or nondescript puddings know, alas, only too well what I mean. Remember, this little thoughtfulness will delight most grown persons just as it sometimes tempts a child to eat proper food. It is the unexpected in food as in other gifts that delights the sick person.

### SIX SUGGESTIONS

1. *Wear costumes that are cheerful and becoming.*
2. *Let gifts be somewhat off the beaten track.*
3. *Give reading matter which is easily handled and which will help lift the patient's spirits.*
4. *Let your donations be such that they may provide some special comfort and convenience for the sick.*
5. *Bring flowers that a patient can watch grow.*
6. *Try giving toys and puzzles that create interest because they have a funny or clever turn to them.*

Among those remembrances that I have seen prized with an affection that was actually touching were playing cards, bridge size, with gaily colored backs; a water glass with a dainty cover; a simple, but handy, writing pad with compartments for the stamps, pencil, envelops and paper; a comb in a case; and, of all things, a small dictionary, just what the recipient had wanted most.

Once an enterprising niece made for her convalescent aunt a "sewing envelop" from a rather heavy, wide manila envelop. Both sides were covered with clever colored pictures and the envelop contained needles of different sizes, small safety pins, scissors, thimble, many colors and kinds of thread wound carefully on cardboard, and two stamped pieces to embroider. Any one who has been ill and has had to ask for all these items will understand the aunt's great joy in her niece's gift. And how such a present can keep a patient's bed from having that untidy look!

One boy who was greatly enjoying his work in manual training made an acceptable stand to hold reading material for his sick father. Another child who loved flowers had, in her spare moments, planted a small box of nasturtiums. She took it to the room of a sick playmate who was also a flower enthusiast.

Let the sick child's mother express herself: "No vocabulary of mine can ever express my gratitude to Mary Dale for bringing her little flower box to Marion's room. From the first time the seeds were watered and the plants began to pop up from the earth until the last bright flower was gone, Marion's interest never wavered. Often I wonder what would ever have become of Marion *(Continued on page 179)*

*What second sight led the sleepwalker like a guardian angel through every danger unscathed!*

# Mesmerism Minus Mesmer

*By*
*Stefan Zweig*

NO IMAGINATIVE writer could have thought of a more tragical misfortune than that which befell Mesmer, which pursued him throughout life, and dogged him long after he was dead. It was indeed one of life's ironies that such an inveterate seeker and experimenter as Mesmer should not have been the discoverer of his own discovery, that a system which has ever since his day been known as "mesmerism" should be neither the doctrine nor the revelation of Franz Anton Mesmer himself.

A peculiar form of energy which has since proved of decisive importance to our knowledge of mental dynamics was first observed by him, and yet—such is fate—he was unaware of the fact that he was contemplating, seeing it and at the same time overlooking its existence. The merit of having made a discovery whose factual existence no one can deny does not accrue to him who prepares the way for it, but, rather, to him who substantiates it and finds a formula that makes it comprehensible to every one. Thus the laurels cannot be laid upon Mesmer's brow but rightly belong to his devoted pupil Comte Maxime de Puységur, who was the first to show that by means of what we now call hypnosis an individual could exercise an influence for weal or for woe on the mental condition of his neighbor. By this discovery the count opened up the vast buffer state that lies between the realms of the conscious and the unconscious.

In the very year when Mesmer was marching forth to defend his beloved theory of "the magnetic fluid" and was exchanging sallies with academicians and learned societies, his pupil published a well-documented but unpretentious pamphlet entitled "Rapport des cures opérées à Bayonne par le magnétisme animal, adressé à M. Pabbé Poulanzet, conseiller-clerc au parlement de Bordeaux, 1784." Here the French savant gave clear demonstration of matters that the metaphysically minded German had vainly sought in the cosmos and its mysterious "fluid."

Puységur's experiments burst open the doors leading into the mental world, and did so from an utterly unexpected angle. Since ancient times, during the Middle Ages as in the days of classical antiquity, scholars had contemplated with ever renewed astonishment the intermittent phenomenon of "lunacy" and had looked upon sleepwalkers as unaccountable eccentrics whose

vagaries were outside the domain of reasonable explanation. Again and again, among a thousand or a million normal human beings, one of these strange creatures would crop up. During sleep, apparently moonstruck, he would arise from bed and with closed eyes, neither seeing, nor feeling his way with hands or feet, would climb stairs, scale ladders, issue forth on to roofs, there to clamber among gables, dormers and chimney-stacks, while running hair-raising risks. Then he would quietly return to bed, and on the morrow would have no inkling of the night's escapade.

Until Puységur furnished an explanation, the meaning of this obvious phenomenon had eluded even the most perspicacious brain. Such persons could not be said to suffer from mental disease, for in the waking state they were able to carry out their daily avocations as well as any of their companions. Neither might they be looked upon as normal, for their behavior during sleep was glaringly unusual. What was it that guided the noctambulist when, unguided by the waking intelligence, he set forth on the most perilous adventures and performed feats that in the normal state he would never venture to undertake?

Who saved him from disaster? What *sens intérieur*, or second sight, led the sleepwalker like a guardian angel through every danger unscathed? Such questions had been pondered by the sages of antiquity. For two thousand years and more the human reason had been nonplussed by this inexplicable trick of nature. It was as if life were a conscious being who delighted from time to time to throw a bombshell into the well-ordered realm of things, so that by such deviations from the normal mankind might be recalled to a proper reverence for the irrational!

Now comes a pupil of this tiresome Mesmer, a pupil who is not even a qualified medical man but a mere amateur magnetizer, and proves beyond all peradventure that the manifestations occurring during twilight states of consciousness are not isolated lapses from the orderly plan of nature, are not unique deviations from the normal, like a child born with a bull's head or some other rare monstrosity, but constitute an organic group of phenomena that can at will be artificially induced during magnetic (or, as we should say, hypnotic) sleep.

Puységur was a distinguished and wealthy member of fashionable society, a man of philanthropic disposition, who had early been won over to Mesmer's teaching and was an ardent supporter of the theories of his master. A humane dilettante inspired with philosophic curiosity, he practiced magnetic therapy on his estate at Buzancy, never accepting a stiver for the treatment he undertook. The patients who came to him were not hysterical marchionesses or decadent artistocrats, but cavalry soldiers, farm hands, rough and healthy material for experiment, absolutely free from the taint of neurasthenia—and all the more valuable for that. But a number of them were ill in one way or another and wished to be cured of their various ailments, so Puységur, faithfully carrying out the prescriptions of his teacher, endeavored to produce as powerful a crisis as possible in these patients.

One day he stumbled upon something new, and was greatly alarmed. A shepherd lad named Victor, instead of responding to the magnetic manipulations in the way that had become customary, went off into a peaceful slumber beneath the magnetizer's gently stroking fingers. Since such a result was contrary to all the rules of the game, Puységur endeavored to rouse the boy. Every effort proved futile. The count called to him, shook him by the arm; young Victor remained deaf to the appeals. But it became obvious that the shepherd's sleep was no ordinary form of slumber. When once again the mesmerist ordered the lad to stand up, Victor obeyed and with closed eyes took a few steps forward. In many respects, however, the boy behaved exactly as though he were awake, as though he were in full possession of his senses. Here in broad daylight the phenomenon of nightwalking could be observed; the youth had become a somnambulist.

*Beneath Peségur's stroking fingers the lad went off into slumber.*

Taken aback, Puységur began to speak to Victor, to question him. A fresh surprise was in store. Victor answered while still in the dream state, and his replies were lucid and to the point. Excited by the novelty of his experiment, Puységur repeated it again and again, finding that not only did the young shepherd respond to this magnetic (suggestive) treatment while in a state between sleep and waking but that many other persons did the same.

Overwhelmed at first by the unexpectedness of his discovery, Puységur now set to work with redoubled zeal and energy to make further experiments. He gave so-called post-hypnotic orders; that is to say he commanded his patients

while they were still in the sleeping state to perform such and such actions on awaking. And in actual fact the mediums carried out these orders as soon as they awoke; nor did they require any further commands to set the chain of reactions in motion. The record of these amazing occurrences in the count's pamphlet marks even more clearly than Mesmer's discovery the prelude to the new psychology. The Rubicon had been crossed, and this nonprofessional pioneer had entered the undiscovered country leading to hypnotism and suggestion on the one hand and to psychoanalysis on the other.

It goes without saying that hypnosis did not make its début in the world at Puységur's instance. All he did was to make the world aware of it. Paracelsus had already drawn attention to the fact that in a certain monastery in Carinthia the monks were wont to distract sick folks' concentration on their ailments by making them fix their gaze on a glittering object. From the days of Apollonius of Tyana onward we come across early indications of hypnotic procedure. Men had long since been aware of the fascination exercised by the eye of a serpent; and surely the Gorgon's head, a glimpse of which turned men to stone, was but a symbolization of the paralysis of the will by suggestion. Nevertheless this compulsive paralysis of attention had not hitherto been put to methodical usage; Mesmer himself did not realize the effect his stroking and fixing of the patients had produced. He had frequently observed that under his manipulation certain patients would get heavy eyed, would yawn and would appear to go to sleep, that their lids would quiver and slowly close. Jussieu, casual witness though he was, reports on such a case. He tells us that a patient suddenly rose up with eyes fast closed, walked over to where other sufferers sat, magnetized them, and then still with closed lids returned to his place and sat down quietly, without in any way becoming aware of his own activity—a dream-walker in full daylight.

### *"Mesmerism" a Misnomer*

Mesmer must have seen such induced slumber hundreds of times in the course of the many years during which he practiced, must have observed this sinking of the personality back into itself, this loss of contact with the outer world. But since his thoughts were wholly concentrated on inducing the crisis, since he held the convulsive seizure to be mainly responsible for bringing about a cure, he overlooked the importance of these other strange conditions, these twilight states.

Himself hypnotized by his idea of a universal fluid, the ill-fated man kept his gaze fixed on one single point and lost himself in his own theory. He would have done better to follow Goethe's words of wisdom, to realize how essential it is to grasp that even in what we call "facts" a theoretical element is implicit—that we need not look for something behind phenomena, since these are themselves the doctrine of which we are in search. Thus Mesmer passed by the truly great idea of his life, and it befell that another reaped where he had sown. The decisive phenomenon, the existence of a "night side" in nature—hypnosis—was discovered by Puységur after his master had failed to see it. "Mesmerism," therefore, is a misnomer—just as "America" is wrongly named after Amerigo Vespucci.

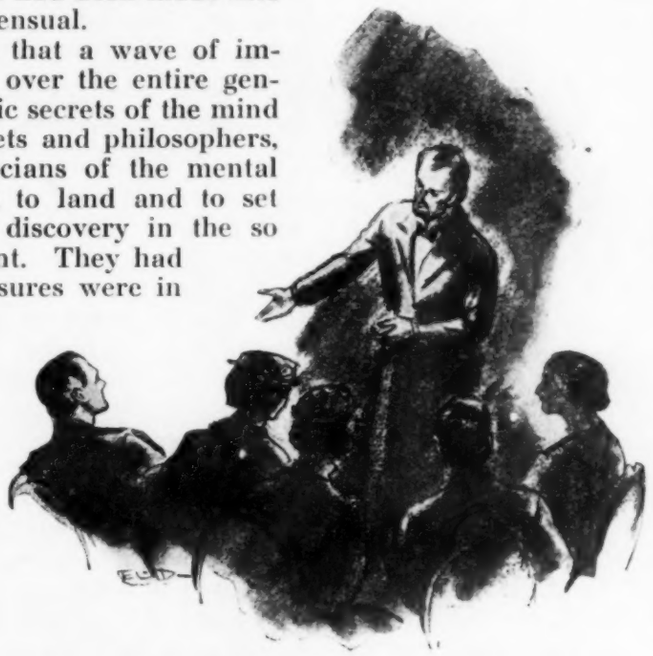
Insignificant as this discovery may have appeared at the start, it has proved of inestimable value in the sequel. The field of observation was widened, a third dimension was introduced. What became obvious after the experiments with the young shepherd of Buzancy was that the human mentality contains an immense sliding scale of states between black and white, between sleep and waking, between reason and impulse, between will and compulsion, between conscious and unconscious; and herewith was thrown the first clear illumination into that which before had been vaguely and comprehensively termed the "mind" or "soul." Puységur's experiments proved incontestably that even the most unusual, the most unnatural mental phenomena obey definite norms, no matter how ill they seem to fit the framework of nature. Sleep, hitherto looked upon as a negative condition, as the absence of waking consciousness and therefore as a black vacuum, was seen when studied by these lights to be full of revelation.

### *Waking Sleep*

Here was an intermediate stage betwixt sleep and waking—a waking sleep or a sleeping wakefulness. In that strange condition there was an interplay of mysterious spiritual force which worked on a different plane from that of the conscious intelligence. Ordinarily they escaped the observer's notice and were only made perceptible in this trance state by the removal of the censorship of consciousness. At that date, of course, these ideas were but dimly realized; yet dimly they were realized even then, as an anticipation of a discovery that psychoanalysis was to perfect a century later, with such rich fruit for our own time. This interconnection with unconscious processes gave all mental phenomena a new and fuller significance; countless intimations surged tumultuously through the door thus opened more by luck than by cunning. "It was mesmerism," writes Pierre Janet, "which first necessitated a study of the phenomena of concentration and deconcentration, of fatigue, and attention and hypnosis, of nervous crises and of simulation"—the phenomena that bulk so large in modern psychology. At length much that had hitherto been regarded as transcendental and magical could be logically grasped by the sober senses.

Puységur's apparently insignificant observations suddenly opened the doors to an inner universe, and this created a tremendous stir among his contemporaries. Overwhelming, almost uncanny, was the effect which "mesmerism," as the first scientific knowledge of phenomena hitherto regarded as occult, swiftly produced in the educated circles of Europe. Montgolfier had gone forth in his balloon to the conquest of the air; Lavoisier had discovered a new system for the classification of the elements; now an irruption had been made into the realm of the suprasensual.

Can we be surprised that a wave of immeasurable hope swept over the entire generation? At last the basic secrets of the mind would be revealed. Poets and philosophers, those undying geometricians of the mental universe, were the first to land and to set forth on a journey of discovery in the so recently sighted continent. They had a premonition that treasures were in store for him who ventured boldly forward. Romance was no longer to be sought under druidical oak trees or in the world of the "little folk"; extraordinary adventures could now find their setting in the sublunary sphere between dreaming and waking, between willing and compulsion.



*Even in Mesmer's day it became fashionable to hold mediumistic seances.*

The portals being flung open, light could now penetrate into a hall that had so far never been illuminated. Unfortunately, as is always to be observed when barriers to the unknown are first broken down, the company of serious explorers was swelled by a mob of feather-brained inquisitives, fools and rogues. Mankind suffers from the illusion (a dangerous illusion, which nevertheless is akin to the divine) that with one leap it is possible to cross the frontiers of the terrestrial and to solve the riddles of the universe. Enlarge the entrance to the realm of knowledge by an inch, and we fancy with our inveterate hopefulness that, thanks to this tiny increase, we now possess the key that will open all the doors to what has hitherto been incomprehensible.

Such was the case in the instance we are now considering. Hardly had the fact been established that a person in the hypnotic state could be induced to answer questions than it was believed that mediums could answer every question. With perilous haste, persons who were amenable to suggestion in the dream state were promoted to the position of those gifted with second sight; waking-dream conditions were looked on as truly prophetic. By means of this newfangled "bewitchment," a deeper, a so-called inner sense was supposed to be aroused into action.

Schubert writes: "During magnetically induced clairvoyance, an intelligible tongue is given to that instinct which enables a bird to fly across the ocean toward a country it has never seen, or an insect with prophetic foresight to prepare a larder for an offspring not yet born, so that the spirit, dumb before, can understand and answer our questions." Some of the more extravagant of Mesmer's disciples maintained that "during the crisis, somnambulists can read the future, their eyes can penetrate to the farthest horizons, and in every direction." By means of introspection, they could become truth-sayers, interpreting faultlessly their own inner state and that of any outsider; they were able thus to give a correct diagnosis of every disease. Untutored though they were, they would speak Latin, Hebrew, Aramaic, Greek, what you will, so long as the trance persisted; they would pronounce names they had never heard before; they would solve the most difficult problems as if these were mere child's play.

If a somnambulist were thrown into the water, he would not sink; give him a closed book and he would read it as though the pages lay open before him. He could perceive events taking place in another continent, could unravel age-old crimes that had eluded all previous investigation. In a word, the most incredible, the most nonsensical powers were attributed to mediums. One in an induced trance would be conducted into a cellar where treasure was supposed to be hid; then the poor creature would be buried up to the breast in order that by thus coming into direct contact with the medium the earth might give up its treasures of gold and silver. Again, he would be blindfolded and placed in an apothecary's shop so that with the aid of his "higher" senses he might point out the correct medicine to administer to a patient. Amazing occult powers and phenomena, which even today have a certain vogue—second sight, thought-reading, spiritualistic materialization of the dead, telepathy, teleplastic arts—all have their origin in the enthusiasm aroused by the "night side of nature."

Soon a novel kind of career was called into being, that of the professional somnambulist. Since a medium was esteemed according to the quality of the manifestations he or she was able to produce, trickery and cheating rose to a fine art. Even in Mesmer's day it became the fashion to hold mediumistic séances of an evening, when the shades of Julius Cæsar and the twelve apostles would be called up for the entertainment of the onlookers. The credulous and the half-educated were indefatigable in their appreciation of the miracles wrought by somnambulists. How can we be surprised that men of science should at first merely have shrugged their shoulders at such excesses and later have lost patience altogether and turned away in disgust?

Gradually, in the course of the nineteenth century, mesmerism became tabu. When crowds run riot, sages go into retreat. An overplus of popular attention is not favorable to the quiet growth of an idea. Excessive enthusiasm will, for a time, condemn even the most fecund of thoughts to a term of suspended animation. . . . A boom is followed by a slump. Have we not all watched this recently in the case of Coué-ism?

### *An Intellectual Tragedy*

Poor Mesmer! No one could have been more outraged than he to see this process, named after himself, rise to so tumultuous a popularity. He had seriously set out to find a new and efficacious method of treatment for human ills, but his scientific researches had merely given a lot of necromancers, pseudomagicians and occultists an opportunity for a mad revel; and, since his name was associated with this folly, he felt himself to blame.

But the poor fellow's protests fell upon deaf ears: "Many a prejudicial judgment has been pronounced against me on account of the reckless levity of those who are imitating my methods." Yet how could he give the lie to such enthusiastic, though indiscreet supporters? After 1785 "animal magnetism" was choked by the bastard growth of "mesmerism." That which the combined malignity of academies and the men of science had been unable to achieve, Mesmer's foolish and noisy successors succeeded in doing, with the result that for decades Mesmer's name was under a cloud and his teaching discredited.

It is always an intellectual tragedy when a discovery is more brilliant than its discoverer, when the thought of an artist or a scientific investigator is incomprehensible to the thinker so that he gives it forth to the world inchoate. That was what happened in Mesmer's case. He was the first to moot one of the most important problems of modern times, and had advanced a considerable way toward its solution, but after all the problem was too big for him. He had thrust a question on the world, a question to which he himself had vainly sought an answer. Yet though in the end he strayed from the path, he was none the less a forerunner, a pathfinder, a trailbreaker, for assuredly it is undeniable that all the psychotherapeutic methods of today derive by one route or another from the discoveries of Franz Anton Mesmer, who not only as a pioneer happened on the recognition of the power of what we now call suggestion, but, however crudely and however mistakenly, maintained the practice of the first scientific method of mental healing against the laughter, the scorn and the contempt of an unduly mechanical science. These facts suffice to give him a place in history.

### *Healing Power of a Suggestive Personality*

Before Mesmer, no properly trained and accredited modern physician had understood and utilized with full awareness the healing power that a suggestive personality, its proximity, words, persuasion, commands can exert for curative purposes on the sick. The trouble was that he could not interpret his own insight, so that the mental influence whose nature he was unable to understand still seemed to him a sort of mediæval magic. He had not grasped (being in this matter as backward as all his contemporaries) the fundamental notion of suggestion, which is certainly the decisive factor of a considerable moiety of mental healing—though even today opinions differ as to whether the suggestive influence emanates from the action at a distance of the suggestor's will or is wholly the expression of the imaginative powers of the individual in whom the suggestion is operative (autosuggestion). That controversy is modern.

In Mesmer's own time, and for thirty years after his death, the main dispute was as to whether the "mesmeric" influence was physical or mental. There came into being two schools, that of the "fluidists" and that of the "animists." Deleuse, the chief exponent of the fluidistic theory, continued to hold Mesmer's view that what was operative was a physical substance of some sort, the subtilization of some sort of bodily nerve-stuff; he believed (like the spiritualists with their telekinesis and another group of investigators with their doctrine of odic force) that there was some sort of material projection through space of the organic substance of the magnetizer. On the other hand the exponents of the animistic theory, among whom one of the most notable was Chevalier Barbarin, flatly denied that there was any sort of material emanation from the magnetizer, considering that the so-called magnetic influence was exercised by a purely mental effect of the magnetizer's will on the subject's consciousness. On this view Mesmer's hypothesis of some unfathomable "fluid" became entirely superfluous.

*(Continued on page 179)*

# Cheese Salads

By ELIZABETH SHAFFER

HOT vegetable soup seems a natural affinity of cold winter nights, but such soup, unless it includes meat as well as vegetables, needs a protein accompaniment. This may be provided by cheese in any form, but cheese salads offer a pleasant way of introducing the cheese into the menu.

Cheese and pineapple complement each other splendidly in salads. Balls of soft cheese or grated cheese may be placed in the hollow centers of sliced pineapple and one or two slices and balls used for each serving. Plain American cheese, pimento cheese and Philadelphia cream all are served in this way. Mayonnaise or boiled dressing to which whipped cream or sour cream has been added is the best dressing to serve with this salad, but it is a good plan to marinate the pineapple in French dressing for ten or fifteen minutes before combining it with the cheese. Any salad green is suitable as the background for this type of salad.

Another way to combine sliced pineapple and American or pimento cheese of the soft sandwich type is to spread two slices of pineapple, previously marinated in French dressing, with cheese and put them together in sandwich form for individual serving.

Balls of American cheese or Philadelphia cream cheese that has been salted and mixed with cream before being rolled into balls may be used in the hollows of peach halves. The salad is improved if chopped pecans or almonds are mixed with the cheese. A boiled salad dressing to which whipped cream has been added is generally popular with this salad. Pear halves may be substituted for the peaches. When pears are used a pretty variation may be secured by using grape juice instead of cream to soften Philadelphia cream cheese.

Salads in which cheese and fruit are combined may well fill the rôle of dessert as well as salad when they are served with crisp and not too sweet cookies.

Cheese may be mixed into a lettuce salad, which is to be served with French dressing. Shred the lettuce and put it into a bowl. Mix with it either small balls of Philadelphia cream cheese, cubes cut from slices of firm pimento cheese or grated American cheese. Add the dressing, mix well and serve.

When head lettuce is served in cross slices a cheese mixture may be spread on the top of the slice or little balls of cheese may be scattered over it.

Cheese balls of various sorts make a good salad to accompany the winter vegetable soup. Any cheese soft enough to be worked into balls may be used and the size and number of the balls may be varied to give different degrees of heartiness. Such additions as chopped green pepper, minced parsley or pickle, chopped green olives or sliced stuffed olives may be made to American cheese before it is rolled into balls. Chopped nuts or raisins or a combination of these may be added to balls of Philadelphia cream cheese. These may be served on a bed of lettuce with French dressing or mayonnaise.

For two of the heartier cheese salads gelatin is an ingredient.

### Stuffed Pepper Salad

- 2 medium sized sweet green peppers
- 1 cup finely grated cheese
- ¼ cup cream
- 1 teaspoonful gelatin
- 1 tablespoonful cold water
- ¼ teaspoonful salt
- ½ teaspoonful paprika

Mix the cheese with the cream and seasonings. Soak the gelatin in cold water, dissolve it over hot water and mix it thoroughly into the cheese mixture. Have the peppers washed, the tops cut off, and the membranes and seeds removed. This must be done without breaking the shells. Stuff the cheese mixture into the peppers, packing it down firmly. Let it stand several hours in a cold place before slicing thinly and serving on lettuce. Mayonnaise or French dressing may be used.

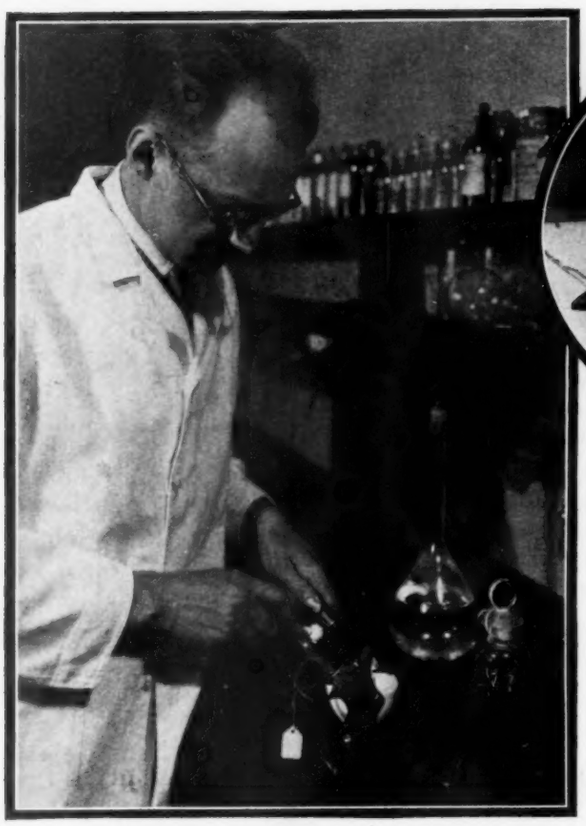
### Hearty Cheese Salad

- 1 Philadelphia cream cheese
- 1 cup grated American cheese
- 1 cup whipped cream
- ¾ tablespoonful gelatin
- 1 teaspoonful salt
- 1 teaspoonful paprika
- ½ teaspoonful prepared mustard
- 1 tablespoonful thin cream
- ¼ cup cold water

Add the seasonings and thin cream to the Philadelphia cream cheese and blend together until smooth. Combine with the grated American cheese and the gelatin, which has been dissolved over hot water. Blend in the whipped cream little by little and when thoroughly mixed turn into molds that have been dipped in cold water. Serve either with mayonnaise or with boiled dressing mixed with sour or whipped cream.

# How Science Solves Crime

*By L. J. Kaempfer*

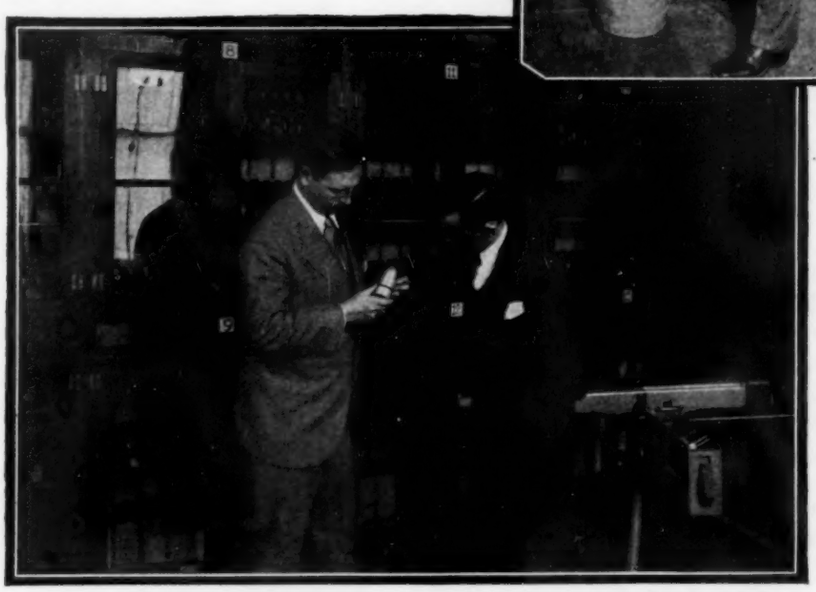


*Dr. C. W. Muehlberger applies special reagents to a weapon to restore the erased serial numbers.*

*Examining the interior of a pistol barrel on the helixometer.*

*Col. Calvin Goddard fires a bullet into a receptacle filled with cotton waste, to obtain the rifling marks.*

FIRST OF A SERIES ON DETECTION OF CRIME



*The gun room of the Scientific Crime Detection Laboratory, with Colonel Goddard and Officer Mulvaney inspecting an aluminum model of a bullet.*

THE scientific approach has manifested itself in numerous fields of endeavor; more recently the attitude has been extended to crime detection. There is no doubt that the methods of criminals have become more and more intricate. Crime has really organized on a large scale.

Scientific services in the form of laboratory experimentation will greatly aid law-enforcing bodies to combat the efforts of crime. The Scientific Crime Detection Laboratory, affiliated with Northwestern University, Chicago, attempts this huge project.

The purpose of this laboratory is not to carry on at the scene the actual investigations involved in the solving of a crime but rather to render to state's attorneys, police departments and other law-enforcing bodies a highly specialized scientific service in the study of the tangible traces of a crime; to make a thorough examination and study of such evidence as is submitted, and to determine by the application of scientific methods the relation of the evidence to the crime committed. Through careful analyses of the exhibits found at the scene, the laboratory is prepared to offer assistance in the following instances:

Detection of adulterations.
Biologic tests.
Identification of blood, human or animal.
Blood grouping for identification purposes and the determination of paternity.
Firearm identification.
Decoding of codes and ciphers.
Recognition of counterfeit coins, bills and stamps.
Dentistry in human identification.
Questioned documents.
Analyses of dust and of various types of explosives.
Identification of fibers, finger-prints and footprints, shod and unshod.
Forgeries.
Glass fractures and their causes.
Identification of hair, human and animal.
Identification of handwriting and typewriting.
Moulage, a method of preparing casts.
Identification of the presence of poisons.
Powder markings by firearms.
Restoration on firearms of erased serial numbers.
Serologic studies.
Analyses of soil from shoes or clothing.
Analyses of stains from spermatozoa in rape cases.
Identification of textiles.
Tire prints involving identification of tires.
Ultraviolet rays in detection of invisible writing.

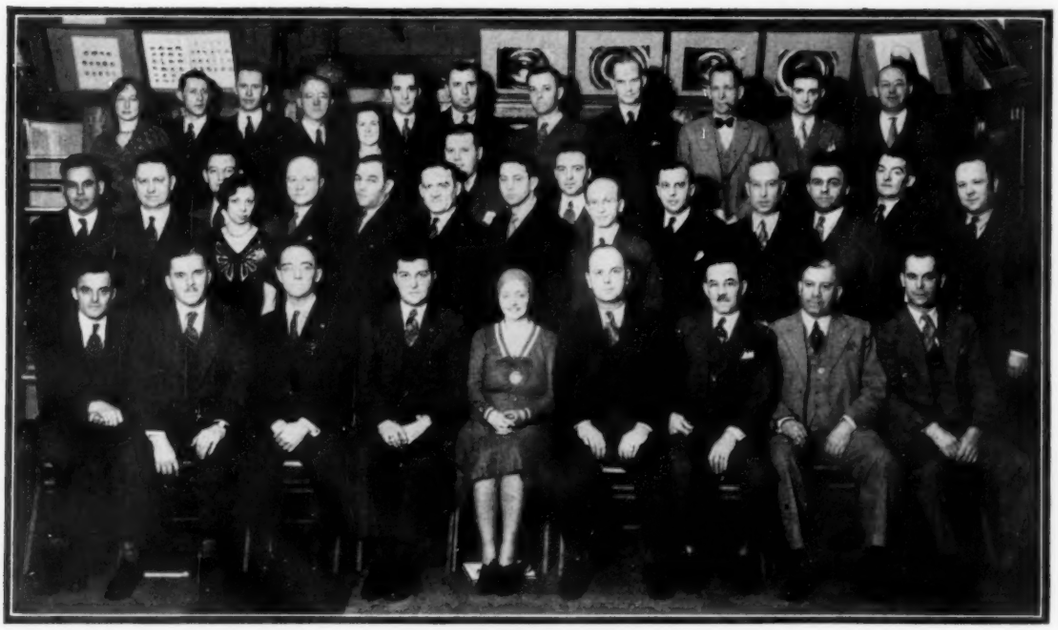
The Scientific Crime Detection Laboratory was established in the spring of 1929. The personnel of this organization consists of two groups: first, the full-time staff, members of which are engaged in the activities of carrying on the actual operation of the laboratory; and second, the consulting staff, consisting at present of fifteen members, who by reason of their individual training in various fields are able to render great assistance to the permanent group in matters for which the latter have not the requisite specialized training. It is necessary that the members of both are recognized authorities in their certain activities, and all appointments must be approved and confirmed by the authorities of the university with which the laboratory is affiliated.

*Leonarde Keeler interrogates a man on the lie detector, his invention.*

I shall not attempt here to recount in detail the undertakings of our several departments; these will be discussed in later articles, but I shall mention those most frequently called on for their services.

In homicide cases wherein firearms have been employed the bullets and shells, together with weapons suspected in the case, are submitted to our department of firearm identification. Here, by means of certain markings imparted to the bullet from the rifling in the gun barrel or others on the shell head made by the firing pin, it is usually possible to determine whether or not a given bullet or shell was fired by the arm or arms in evidence. In cases in which no suspected weapon is submitted, this department can ordinarily name the type and caliber of the bullet involved and the make of weapon to look for.

Another means of identification is by powder burns, which, when a gun is fired at close range, may occur in the flesh of the victim; further, a few unburned grains are frequently present within the bore of the weapon after firing and serve to identify the type of powder employed in the firearm.



*The first class in scientific crime detection methods ever held in the United States. It met in April and May, 1931.*

In connection with this method of identification the laboratory maintains a reference collection of bullets of all calibers, makes and types fired from arms of nearly every known variety; a collection of sample bullets, primed shells and loaded cartridges in every pistol size by every American manufacturer, plus a number of foreign samples; a mass of revolvers, single shot pistols, repeating and automatic pistols of a myriad makes, calibers and patterns from every part of the world, and samples of all types of powders entering into the manufacture of American pistol ammunition.

### *Two Ways of Detecting Deception*

Another department that has done much valuable work in the field of crime detection is that of forensic psychology. This is concerned with investigations of an entirely different and relatively new type; namely, in the detection of deception. These are conducted by means of the lie detector, an instrument that records the changes in blood pressure, respiration and skin conductivity accompanying emotion, by which it is possible to determine whether or not persons undergoing interrogation are replying truthfully. This machine is proving so successful and becoming so widely known that many large business organizations are now making use of it by having applicants for positions of trust tested by it and approved by this department before receiving appointments.

A second means of detecting deception employed by our psychologists involves the use of scopolamine, or as the newspapers have called it "truth-serum." Minute doses of this drug are administered, inducing in the person tested a somewhat beclouded mental state in which it becomes impossible for him to call into action those mental processes necessary for the fabrication of a falsehood. Past experiences are readily called to mind, however, which he is, for some reason not as yet fully understood, unable to repress, and as a result responds truthfully. This method is still in more or less of an experimental stage, but in general is proving quite successful and in many cases has been of great assistance in crime solution.

The laboratory maintains its own photographic equipment, which proves a valuable aid to each of its several departments in that it is often essential to prepare photographs of objects in evidence in furthering a thorough study of them; it is also employed in the making up of exhibits for court presentation. In addition, our films constitute permanent records that may be referred to in the future, this being especially important when the identification of various objects in their condition prior to being subjected to certain tests becomes a point at issue.

### *A Museum and a Library of Crime*

Two important divisions of the laboratory not thus far mentioned are the museum and library. In the museum are exhibits demonstrating the application of various methods of studying crime traces such as moulage specimens, fingerprints, handwritten and typewritten documents, fired bullets and shells, firearms and materials showing stains of blood and other substances. All of these exhibits are from actual cases. The library comprises many hundred volumes of a criminal-technical type in various foreign languages as well as in English. This reference collection is constantly being added to, so that the material therein contained will be up to date.

Early in the history of the laboratory, the directors of that corporation realized the need of some organ by which to convey information to law-enforcing agencies all over the United States as to advanced methods of crime detection that are being developed and applied throughout the world and of newly devised apparatus to be employed in analyzing the traces of a crime. Heretofore there was in this country no medium by which such discoveries and methods could be circulated for the benefit of those who wished to inform themselves concerning them. For this purpose the publication of the *American Journal of Police Science* was undertaken. This journal, like the laboratory, was an entirely new venture and, as in the case of the laboratory, we had to look overseas for patterns after which to fashion it.

### *Journal Gives Latest European Methods*

The *American Journal of Police Science* publishes in general no articles not representing either original research or personal experience with scientific methods and apparatus of practical value. Manuscripts are accepted only from those who are recognized authorities in their individual fields of endeavor. Much material on such experiences has already been recorded by European experts, and a large portion of that which goes into our own magazine is translated by permission from foreign sources. In this connection, the laboratory subscribes to numerous foreign journals, excerpts from which we translate completely in order that our readers may become acquainted with the valuable work being carried on elsewhere in this field as well as in America. For this purpose the editorial staff includes the services of an accomplished linguist and librarian.

Our undertaking has proved most successful, the journal having been received with enthusiasm and favorable comment by our foreign contemporaries as well as by law-enforcing agencies throughout this country.

Subsequent to the organization of the laboratory so many urgent requests for information concerning the methods and apparatus employed in scientific crime research were received that it was decided to offer a course in scientific methods of crime detection. Accordingly, one was initiated, beginning on April 13, 1931, and lasting for a period of four weeks. This was a short but intensive period of instruction, covering some sixty subjects in all. The mornings were taken up by lecture periods, and the afternoons by actual laboratory work under the supervision of various staff members. During the last week, examinations were conducted and certificates issued to those who had satisfactorily completed their studies in scientific crime detection.

Membership in our first class included representatives of police departments from widely separated points throughout the United States. Among these were officers from Miami, Washington, D. C., Providence, Pittsburgh, Portland, Ore., St. Louis, Rochester, N. Y., Philadelphia, Pasadena and Chicago. The Department of Justice at Washington, D. C., sent one of its representatives, and some police departments detailed as many as five of their men for this training. The results were so satisfactory and the students so enthusiastic that it was decided to repeat the course from time to time.

At present, plans as yet incomplete are being made to conduct a longer and more complete period of instruction along similar lines. Its duration will probably be two months, the first month to cover only rudimentary subjects and to be designed for persons seeking appointment locally as police officers. The second will be devoted to more advanced material in the field of crime detection and will be available for those who satisfactorily complete the first, as well as for others throughout the country who have already had police experience but who wish to add to their specialized knowledge of this work.

### *"Scientific to the Last Degree"*

That the efforts of the laboratory in this direction have already received country-wide recognition is evidenced by the following quotation from the report of the National Commission of Law Observance and Enforcement (George W. Wickersham, chairman), published by the Government Printing Office under date of June 26, 1931: "Scientific to the last degree, it is establishing a precedent for which there is no equal in this country at the present time."

*The next article in the series is on firearm identification. Lt. Col. Calvin Goddard is the author. It will appear in the March number.*

William Thompson

*A painting "The New-Born" by LaRoche. It hangs in the Museum of Art, Arles, France.*

# Nourishing the New-Born

BY

JOSEPH H. MARCUS

IT IS unusual these days to see a breast-fed baby, although for an infant to have his mother's milk is one of the greatest advantages that a young and healthy parent can bestow on him. Even if the trend is toward artificial feeding as opposed to breast feeding, it is well to keep in mind what nature intended for the good of both mother and infant. Cow's milk was primarily intended for the stomach of the calf. Modesty and fashion may be subordinated to the welfare of the coming generation, if health permits. Substitutes for breast milk require measured care and constant supervision.

There is no perfect substitute for mother's milk. On this the baby thrives best, develops normally, suffers least from nutritional disturbances, and obtains the best foundation for minimizing sources of illness. Mortality statistics demonstrate beyond a doubt that only one breast-fed baby dies during its first year of life to every ten babies who are bottle fed. The breast-fed infant thrives better, is less liable to rickets, seems to possess certain immunity in early infancy, and is especially well able to withstand infection. All attempts to produce a cow's milk that is chemically equal to human milk and thus to make it equally valuable have failed. It has been stated with some truth that "the feeding bottle has killed more infants than gunpowder has killed adults."

Frequently mother's milk has become restricted to emergencies and to the feeding of the premature baby. The secretion of milk for the nourishment of their young is a function of all female mammals and from time immemorial it has been recognized that the mother's milk is the only single food that is physiologically suited for her infant. It forms the physiologic connection between mother and infant, although the anatomic connection between them has been severed at birth.

The size of the breast gives no information regarding its ability to secrete milk. It may contain little milk-producing structure and be rich in connective tissue and fat, which makes it appear large. Such breasts will secrete little milk, while a small breast rich in glandular struc-

ture will produce an adequate supply of milk for the new-born child.

A galactagogue is a substance that, when given to the mother, will help the process of lactation or milk formation. Numerous medicines are offered for this purpose, but there is no scientific evidence that they produce appreciable results. The good effects occasionally seen after the use of such galactagogues are mostly psychologic rather than physiologic. Pituitary gland extract, for instance, undoubtedly produces a flow of milk from the breasts; this, however, is not due to increased secretion but to the action of the active principle of the gland extract on the muscle fibers of the breast, causing them to contract and expel the milk already in the breast. Massage and manual maniplation will do the same.

The best ways to ensure a good flow of milk include the following: the complete emptying of the breasts by manual expression, if necessary, after each feeding; regularity in nursing; healthful living; good nourishing food neither too little nor so excessive as to cause indigestion; a plentiful supply of fluid; a reasonable amount of exercise, and, above all, freedom from worry and undue excitement.

The new-born babe that has breast feedings only, that is not vomiting and has no diarrhea, but is not gaining in weight, is receiving food deficient in either quality or quantity, or both. An accurate method of ascertaining the quantity of breast milk the baby receives is to weigh the baby before and after each breast feeding; the difference between the amount he should get and that taken from the breast may be made up by a bottle feeding. To obtain an average, the weighing should be done with every feeding during a period of twenty-four hours. More food may be obtained from the breast at certain nursings than at others during the day. Following the use of complementary feedings, sufficient milk is sometimes obtained from the breast, making it unnecessary to continue with the complementary bottle.

The first secretion from the mother's breast is termed colostrum, which gradually changes in composition from day to day. About the fourth day, it becomes practically indistinguishable from true milk. Certain immunizing elements against disease are believed to be present in human colostrum, conferring immunity to the baby in the early infantile period. In addition, this forerunner of milk is a useful material to accustom the infant's alimentary tract to the work of digestion.

In considering the hygiene of the nursing mother, if she is overfed and does not take sufficient exercise there frequently appears an excess of protein in her milk, causing the baby indigestion, with subsequent colic. The milk is manufactured out of the mother's blood, and it is necessary that her diet be sufficient to supply her own needs as well as the baby's requirements. Schick's rule, as a popular guide, is "A nursing mother should eat as much of each article of food as her nutrition requires and, besides this, she should eat of each article of food one-half as much again for the purpose of milk production." This is a simple rule to follow.

*William Thompson*

*A painting "Motherhood" by Van Muyden in the Gallery of Art and History, Geneva.*

If certain foods disagree with the mother, such as shell-fish, spicy foods and highly acid fruits, they should be barred on account of the likelihood of their upsetting the mother's digestion with the formation of toxins that may pass to the baby. Again certain foods, such as asparagus and cabbage, may impart a peculiar flavor to the milk that may be disagreeable to baby. The diet, however, must contain an adequate supply of vitamins; otherwise the vitamin content of the milk will be defective and so cause subsequent nutritional disturbances and evidence of illness in the baby. Spirits and liquors should be forbidden, although light wines, beer and moderate smoking are permissible.

An adequate supply of nonstimulating or bland fluid should be taken in order to provide enough fluid for milk formation as well as for proper kidney and skin elimination and for aid in evacuation of the bowels.

A reasonable amount of exercise is absolutely necessary as it tends to maintain the protein in the breast milk at a normal level. Any form of outdoor exercise that the mother enjoys is suitable, provided it is not carried to the point of undue fatigue. It is especially desirable that the mother have undisturbed sleep during the night, if conditions warrant. Frequently after the baby is about a month old it is possible to omit the feeding at 2 a. m.

The nursing mother should rest for at least one hour each afternoon and should indulge in complete relaxation and rest for a certain period of time after each nursing. The mother who is overworked in the performance of household duties is not likely to receive any benefit while taking outdoor exercise. In these instances sitting outdoors in a comfortable chair or hammock, motoring or boating will prove advantageous.

As much as possible a nursing mother should be relieved of worry, mental strain and undue excitement. The milk of a neurotic woman is believed to contain an excess of protein. If her supply of milk is not sufficient the baby consequently will always be hungry and fretful, and the mother will get little rest. Her milk supply will not increase under these circumstances. Additional feeding is obviously indicated.

Constipation in the mother should be combated by dietary measures, abdominal massage, the use of mild laxatives and preparations of mineral oil, and the proper medical or surgical treatment of any underlying cause. The use of strong purgatives should be avoided, especially saline aperients, because they pass through the milk and may cause diarrhea in the baby; frequently watery motions are produced that deplete the milk of a great deal of its water content, thus producing a too concentrated milk. It is obviously unnecessary to reflect on the general health of the mother in relation to successful breast feeding. The mother should be temperate in all things.

Carious teeth frequently cause irreparable harm to both mother and nursing baby, and investigations have demonstrated that bad teeth in the mother may retard the baby's growth.

### *Care of the Breasts*

Care and cleanliness of the breasts and nipples are highly important. The breasts at no times should be compressed by close fitting dresses or brassières. If the breasts are extra large and somewhat pendulous, it is a comfort to support them by means of hammocks. When milk secretion is first established, the breasts may become engorged and painful. This condition of engorgement, or caked breasts, may subsequently occur from time to time. In these instances the flow of milk may be decreased by wearing a snug fitting breast binder and restricting the drinking of fluids. On certain occasions gentle massage is helpful; other times it is necessary to express the milk by hand.

After the exhausting effects of childbirth, both mother and infant should not be disturbed for at least twelve hours, after which the baby is fed every six hours. During the experience of active labor the mother has expended much energy and perhaps has been subjected to instrumental delivery and an anesthetic. She has little concern with anything but to enjoy surcease from pain and effort. The infant has emerged from an atmosphere of quiet, darkness, even temperature, placental breathing and feeding, and he needs a period of respite in which to exercise his newly acquired respiratory function and to accustom himself to the changing temperature of the noisy world in which he has suddenly been thrust.

### *Feeding Schedules*

Little colostrum may be obtained at first, but the nursing act will have a tendency to stimulate the flow of milk and will accustom the nursling to suckle. With the beginning of the third day the infant should nurse both breasts every four hours, convenient hours being 6 a. m., 10 a. m., 2 p. m., 6 p. m., 10 p. m., and 2 a. m.

If a three hour schedule is inaugurated, the hours will be 6 a. m., 9 a. m., 12 noon, 3 p. m., 6 p. m. and every four hours during the night, at 10 p. m. and 2 a. m. It is accepted that an infant will lose weight during the first few days of life and a loss up to 10 per cent of the birth weight is called physiologic. It is due to the passage of urine and feces, which is not compensated for by food intake. This loss should be regained between the tenth and the fourteenth day. In general, the bigger the baby the greater is the initial loss. This so-called physiologic loss in weight may often be kept low by offering 1 ounce of water after every feeding and between feedings.

Differences of opinion exist among different authorities as to the intervals between feedings, the British physicians adhering to the three hour interval while in America we generally advocate the four hour interval. This attitude is based on the ground that a long interval allows more leisure for the mother and more time for the breasts to recuperate, with the result that more milk is secreted than following shorter intervals. Also a longer interval allows the infant more time to digest food and to sleep, so that he awakens more vigorous and with a sharper appetite and vomits less frequently.

X-ray examinations have proved that food begins to leave the stomach almost immediately after the beginning of suckling. It has also been shown that the baby receives as much milk in twenty-four hours on a four hour schedule as on a three hour interval. Once the time table has been fixed, it should be adhered to with reasonable punctuality, as irregularity not only upsets

the infant's digestion and the mother's convenience but also has a tendency to interfere with the proper secretion of milk.

If baby is asleep at the time for feeding, he must be gently awakened, and in this way a habit of awakening at the proper time is formed. Such regularity of habit forms a valuable training for the baby's nervous system. Occasionally infants who are fed every four hours become hungry at the end of every three or three and a half hours, especially if they are of the active type and if the previous feeding has been a small one. Under these conditions the baby should not be allowed to cry for a half hour or one hour but should be fed. The following feeding should be at the scheduled hour. As soon as the infant sleeps through the night without awakening and is satisfactorily gaining in weight, the 2 a. m. feeding may be dispensed with. Occasionally after the night feeding has been eliminated, the infant awakens and cries either through force of habit or because of thirst. If he cries from habit, ignore him, for he soon will go to sleep again; if he is thirsty, he is likely to be satisfied with a bottle of water. To be sure, other causes must be sought, such as open diaper pins or wet diapers or bed clothing.

### *Regular Nursing Habits Important*

On the four hour feeding schedule, it is usually advantageous for the baby to nurse both breasts at each feeding, for in this way more milk can usually be obtained than with the three hour nursings of alternate breasts. Babies with irregular nursing habits are prone to be fussy and colicky, and the mother who feeds the baby whenever he cries becomes tired and nervous and her milk supply subsequently diminishes.

The length of time that an infant nurses is not a constant factor. It varies with the sucking vigor of the baby as well as with the secretory power of the breast. Under normal conditions, a vigorous infant will obtain more than one half of the milk during the first five minutes of nursing, while little milk is obtained after ten minutes. Small and weak infants obtain milk at a considerably slower rate. A healthy baby nursing both breasts should not nurse longer than ten minutes at each, and an infant nursing at a single breast for no longer than fifteen or twenty minutes. Babies who nurse for longer periods are likely to swallow air instead of milk. This tends to produce vomiting and colic.

When the milk flows too freely the flow should be regulated by compressing the breast near the nipple, or the nipple should be withdrawn occasionally from the baby's mouth for a few moments. The normal infant requires from two to three ounces of breast milk per day for each pound of body weight so as to supply a sufficient energy ratio. This calculation is based on the assumption that the breast milk is of average quality and contains 20 calories to each ounce. The amount of milk obtained at a single nursing is not uniform and varies from 3 ounces at one feeding to 8 ounces at another. Failure to do well, if properly fed, is more likely to be due to the presence of infections or to congenital anomalies on the part of the infant than to the character of the feeding.

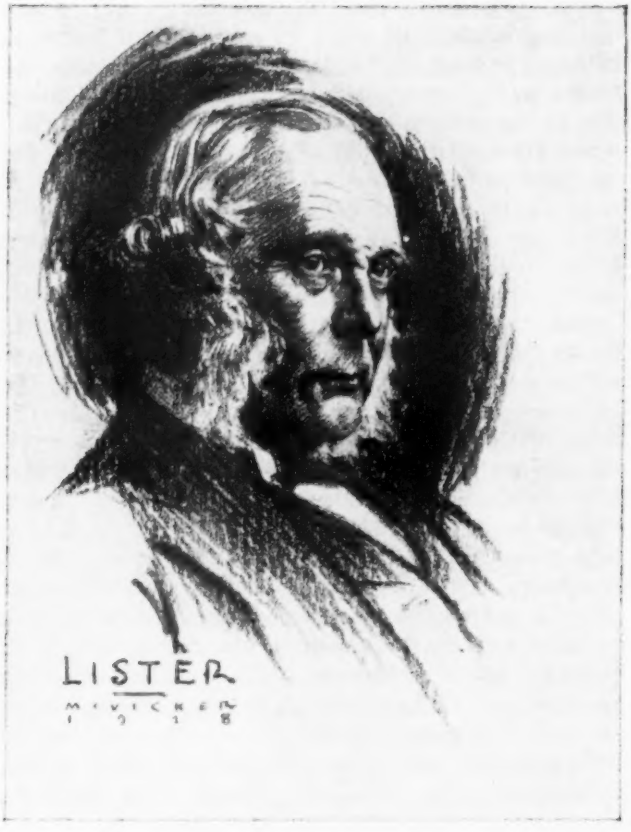
In the technic of breast feeding, the position is of importance and should be one of ease for both mother and baby. During the first two weeks the mother will necessarily have to lie in recumbent posture, at which time both should lie on the side with the baby's mouth at the level of the nipple. If there is an excess of milk the baby's mouth should be somewhat above the level of the nipple. After the mother is allowed up and around, it is preferable for her to sit in a low comfortable chair.

The mother should place her index and ring fingers above and below the nipple, so as to keep the breast away from the baby's nose. His head should be properly supported in the bend of the mother's arm, to prevent its retraction with subsequent interference with swallowing and breathing. X-ray pictures regularly demonstrate in the stomach air, which all babies swallow. In all instances before nursing, the infant should be held upright over the mother's shoulder and patted on the back or gently pressed until the swallowed air is brought up. In some infants, it is advisable to interrupt the nursing to allow swallowed air to escape.

### *Weight Should Treble in Year*

A normal breast-fed infant is well nourished; his flesh is hard and firm, and the skin is soft, pink and elastic; his eyes are bright and his cheeks and nails pink. When awake he is active and happy, has a good disposition and cries only when there is a reason. He has from two to four stools daily and his temperature, pulse and respiration are normal for his age. He has a normal tolerance for his food, and should gain from 6 to 8 ounces a week during the first six months and from 2 to 4 ounces weekly during the second six months. His weight should treble in a year.

A healthy breast-fed infant usually sleeps from twenty to twenty-two hours a day during the first two months and from sixteen to twenty hours a day during the remainder of the first year. Some babies, however, sleep considerably less but thrive in a normal manner. The healthy baby has normal immunity to disease. He should not have frequent colds, bronchitis, boils or skin eruptions. Additional articles of food should be given to the breast-fed baby at prescribed periods of time, to promote proper growth and development. This is particularly essential in rapidly growing babies, in premature and weak babies, and in certain races. Italians and Negroes are especially susceptible to rickets.




O Jerusalem, Jerusalem, thou that killest the prophets, and stonest them which are sent unto thee. —Matt. xxiii, 37.

# Pioneers of Medicine

## *Joseph Lister*

*By*

*Claude Lillingston*

LORD LISTER made the world safe for humanity on the operating table and in childbirth. Hospitals in his student days were hotbeds of infection. Their inmates died like flies, and sometimes there seemed to be no alternative to closing the hospitals down. When Lister died, an old man, they had become temples of cleanliness. Filth, under his antiseptic teachings, had given place to a cleanliness exercised as a solemn ritual. In the past, cleanliness had been next to godliness, and a bad second at that. Henceforth cleanliness was to come first.

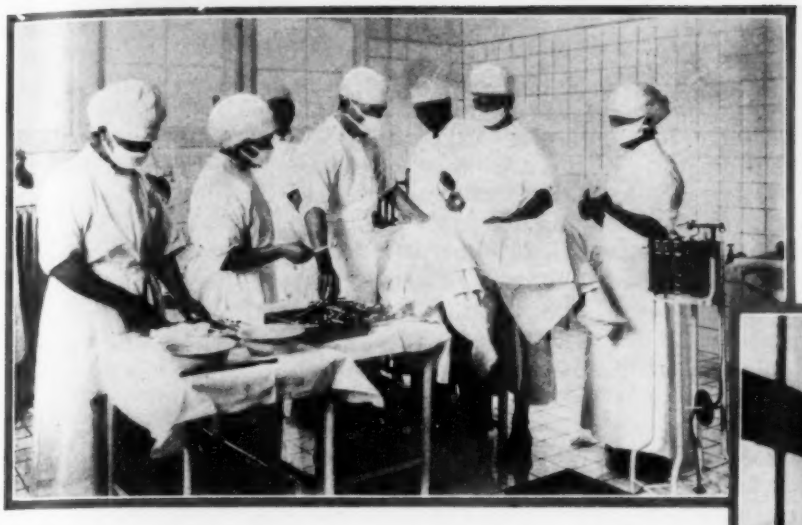
Note the features of this elderly man. Nobility, rectitude, calm judgment, culture and refinement are written large upon them. No dazzling intuitive genius, no coiner of brilliant epigrams and paradoxes, no fighter for the mere lust of fighting. His expression suggests sobriety, a man temperate in all things, meditative, slow of speech, slow to anger, infinitely patient, yet brooking no obstacle between him and the goal he has set himself. If ever a man's personal history was written on his face, that man was Lord Lister.

Joseph Lister was born on April 5, 1827, just outside London. His parents were well-to-do Quakers, and his father joined the lucrative trade of a wine merchant to a hobby that must have been the reverse of lucrative. It concerned optical instruments. So greatly did he contribute to the science of optics and the construction of telescopes and microscopes that he was elected in 1832 to the much coveted fellowship of the Royal Society. Joseph's mother had distinguished herself as a teacher before her marriage. Here, then, was good breeding stock.

Joseph seems to have been boisterous and unruly as a young child, but comparatively early in childhood he acquired that reflective outlook on the world that he preserved for the rest of his life. Though there were no surgeons among his nearest relatives, about the age of 14 he began dissecting animals and quietly determined to become a doctor. His student career at University College in London was punctuated by numerous prizes and medals which occasionally, but seldom, fall to the Heaven-born genius. These successes were the more striking because he always found it difficult to express himself in writing. He often hesitated over the choice of the word that would most exactly express his meaning. He was also a slow speaker, afflicted with a slight tendency to stammer.

### *Under the Influence of Syme*

From London, Lister proceeded in 1853 as quite a young man to Edinburgh, where he came under the influence of a most striking personality, his counterpart in many respects. James Syme was a bold, dashing, skilful and original surgeon. He loved a fight, his pen was as deadly as his tongue, and he was a brilliant teacher. Behind these striking but more or less superficial qualities were the gifts of insight and sound judgment, traits the young man from London was quick to appreciate. It is probable



*No more effectively kaleidoscopic demonstration of the changes Lister wrought in the operating theater could be given than by grouping these two pictures. The one below is a reproduction of the painting by H. Geruex in the Luxembourg Museum in Paris. The famous surgeon of his day, Dr. Pean, stands by the head of the patient, holding forth. One can note the absence of masks, hoods and sterilized overalls in this picture, and the presence of germ-catching curtains by one of the windows. The picture to the left is typical of the operating theater of today.*

that Syme had a greater influence on Lister's career than any one else, his father alone excepted.

Syme's daughter Agnes endorsed her father's appreciation of the young Quaker by marrying him in 1856. This childless marriage was singularly happy and harmonious. This was, perhaps, due in large measure to the fact that Lister shared not only his bed and board with her but also his work; many of the records of his experiments are in her handwriting. Quietly and unassumingly working behind the scenes, supporting him in countless ways, she must have contributed greatly as well as generously to his success in life. Little wonder that, when the end was drawing nigh, Lister preferred to be buried in the obscurity of a country churchyard by the side of his wife, although the demands of the nation for his interment in Westminster Abbey were ever so insistent.

After holding the appointment of assistant surgeon to the Royal Infirmary in Edinburgh, Lister accepted in 1860 the post of professor of surgery at Glasgow University. In the following year he was appointed surgeon to the Glasgow Infirmary. The work that was to prove his crowning achievement belongs to this Glasgow period. Conditions in the Glasgow Infirmary were appalling. The victims of a cholera epidemic had been buried in a common grave only 4 feet away from the walls of his hospital. The uppermost coffins were only a few inches below the ground.

### *The Birth of Lister's Theory*

Lister pondered over the reasons why the wounds of his patients became inflamed and discharging, and he suspected that the surrounding atmosphere might be to blame. But how? In 1865, a Dr. Thomas Anderson, professor of chemistry in Glasgow, drew his attention to Pasteur's recent discoveries of germs as the cause of fermentation. Lister began to wonder if the pus he saw escaping from infected wounds might not be the result of a sort of fermentation of germs that had contaminated the wounds. "It occurred to me that decomposition in the injured part might be avoided, without excluding the air, by applying as a dressing some material capable of destroying the life of the floating particles."

Lister put his theories in practice in 1865, by applying undiluted carbolic acid to a wound caused by a compound fracture of the leg. He chose carbolic acid because it had been found to keep sewers comparatively clean. His association of the problems of sewage disposal with those of suppuration of wounds must have struck his contemporaries as being even more vulgar than it was mad. His first case was not successful, but the successes he achieved in the following cases exceeded his highest hopes. He applied his doctrine of antisepsis to such a degree that he not only disinfected all the instruments and everything else that came in contact with the wound but he also operated under a spray of carbolic acid, the finely divided particles of which were intended to destroy the germs floating in the air over the operation wound.

In 1867, Lister began to publish his new doctrine in the *Lancet*. Abroad, in France and Germany in particular, his ideas were on the whole well received. The prophet who is also a stranger is,

as we all know, often given a hearing. But at home Lister was met with ridicule and incredulity that soon developed into fierce and merciless criticism. His worst enemies were those who stupidly and half-heartedly adopted what they supposed were his methods and then published the ensuing failures. One of the most popular surgeons in London treated a case of compound fracture of the leg by first painting the wound with collodion and, twelve hours later, applying carbolic acid outside the layer of collodion!

Two of the difficulties with which Lister's would-be disciples were faced were the complexity of his antiseptic ritual and the frequency with which he modified it. The breathless neophyte who had just overtaken him in the latest stage of his researches and who had hoped to settle down to a permanently standardized routine would wake up next morning to find Lister had modified his technic overnight and left his disciple to follow suit as best he could.

So bitter was the opposition to Lister in London that when it was known that he had dared to open the knee-joint in the course of operating on the knee-cap, one of his most hostile colleagues publicly voiced the hope that, when the patient died, as die he assuredly must, Lister would be prosecuted for malpractice and be given the punishment he so richly deserved. Only from two quarters did Lister get generous support at home—from his talented and pugnacious father-in-law and from his house surgeons and other disciples.

### *Volkmann Champions Lister's Doctrine*

Among his followers abroad was the great-hearted Richard Volkmann of Halle, in Germany, who in 1872 had been so distressed by the fatal hospital diseases raging in his wards that he was about to close them down when he gave Lister's doctrine a trial as a last desperate measure—not that even he expected great things of it. By 1875, Volkmann had become a convinced and fervent follower of Lister, and at the International Medical Congress in London in 1881 he wound up his enthusiastic advocacy of Lister's doctrines by assuring his audience that England might well be proud to have the name of one of her own sons inseparably associated with the greatest advance that had ever been made in surgery. Listening to this vehement eulogy and remembering his compatriot's yearnings to have him prosecuted and imprisoned, Lister must have pondered over the fragility of the dividing line between saints and sinners.

In 1869, Lister returned to Edinburgh, having been appointed professor of clinical surgery in the place of his father-in-law. Here he continued his experiments and studied how best to drain discharging wounds. In 1871, he introduced the rubber drainage tube for this purpose, and the first patient to enjoy the benefits of this new device was Queen Victoria, who was suffering from a deep-seated abscess in the armpit. A few years later, in 1877, Lister was invited to return to London as professor of surgery at King's College. He accepted the invitation on the understanding that he should be free to bring his staff of loyal assistant surgeons with him—a natural request considering what a den of lions he was invited to enter.

The opposition to Lister and his doctrines, which in some quarters amounted to outright hostility, was unconscionably slow in dying out among his high-placed surgical colleagues, although he did little to fan the flame of controversy by polemical contributions to the press. In 1891, he helped to found the British Institute of Preventive Medicine, which was organized on the lines of the Pasteur Institute in Paris. It has since been named the Lister Institute of Preventive Medicine.

### *Honors Heaped on Him*

Soon after his return to London, Lister began to be the recipient of one honor after another. In 1883, a baronetcy was conferred on him. In 1897, he was raised to the peerage, and between 1894 and 1900, he was president of the Royal Society. In 1907, the Freedom of the City of London was conferred on him.

Meanwhile Lister had lost his wife, who had died on a journey to Italy, and he was left a lonely man in spite of the whole world's friendship and adulation. Loneliness in a certain sense is probably the lot of most pioneers, however much their disciples may crowd round them, and in Lister's case this isolation was heightened by a certain natural solemnity, amounting almost to austerity, in his demeanor. Ready as he was to help any one and every one in serious difficulties, he was constitutionally and temperamentally disinclined for hail-fellow-well-met relations with the whole world. It is impossible to picture any friend, however intimate, slapping Lord Lister on the back. Instead of gossiping and indulging in light banter with his fellow-beings, he preferred lonely walks early in the morning in some park, where he would be free to turn problems over in his mind and jot down notes as ideas came to him.

Lister's attitude of reserve toward the world in general was in marked contrast to the relationship between himself and his father. Gifted son and gifted father were kindred spirits in perfect harmony with each other, and the son's letters to his father are charmingly frank human documents. He tells his father of his doubts and fears and shortcomings, but he also comments on his own gifts and gains in a way that shows he suffered from no false modesty. During the last five years of his father's life, after his mother had died and his father had reached four score years, the young man wrote every

week, telling about his patients and his experiments on them. The father replied in a patriarchal spirit, counselling, admonishing, encouraging.

The last few years of Lister's life were uneventful. The controversy over the revolutionary doctrines of his younger days had died out completely, and as the storms that had raged about him passed away, he was left standing a magnificent monument, accepted as such by all, revered by all, and yet a tragic, lonely figure. When he died on Feb. 20, 1912, the nation bowed in acquiescence to his wish not to be separated from his wife, but his coffin was taken to Westminster Abbey a few days after his death, and there every one, from royalty to the humble people, paid his last tribute to Lister's memory.

The centenary celebrations of Lister's birth a few years ago were the occasion for numerous retrospective studies. One, published by Prof. Peter Bull, a distinguished Norwegian surgeon, conveys a salutary and timely warning to the present generation. He drew a parallel between the poisoned wounds that Lister conquered in his day and the cancer mortality that we have failed to conquer in ours. In his day surgeons found not a little comfort in comparing their own miserable results with those, a trifle more miserable, of their colleagues. It is hardly necessary to point out that this is a form of comfort that surgeons do not altogether deny themselves with regard to cancer at the present time.

After reviewing the present position, so deplorably unsatisfactory, of man's campaign against cancer, Prof. Bull adds: "I, for my part, do not doubt that the time will come when a man will appear, probably a young man, who will show us the right way, and then we may well ask if we shall be ready to receive him as he deserves." Prof. Bull asks: "Shall we be able to put aside envy and self-conceit when some one, perhaps one whom we thought least capable of doing so, succeeds in solving that problem to which the present generation has devoted so many thoughts, experiments and profound studies? Shall we embitter his life with carping criticism, or shall we be able to shed our indifference in order to take up the fight on his side?"

This warning is, of course, superfluous and really quite impertinent if humanity in general, and the medical profession in particular, have undergone profound changes for the better since those early days of the antiseptic era when Lister was threatened with prosecution and imprisonment for his achievements.

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# Tumors of the Blood

*Continued from page 125*

the so-called lymphocytes, many of which also show abnormalities indicating a hasty, premature entrance in the blood stream, and others bearing the marks of imperfect manufacture. There is also an accompanying anemia of varying degrees of severity.

As has been said, exact knowledge of the cause of leukemia is lacking, and because of this attempts at treatment are entirely symptomatic and achieve only temporary results.

Both forms of leukemia have one thing in common: an excessive activity of the leukocyte-producing tissues. The only forms of treatment thus far available are those directed toward these tissues with the idea of depressing their activity.

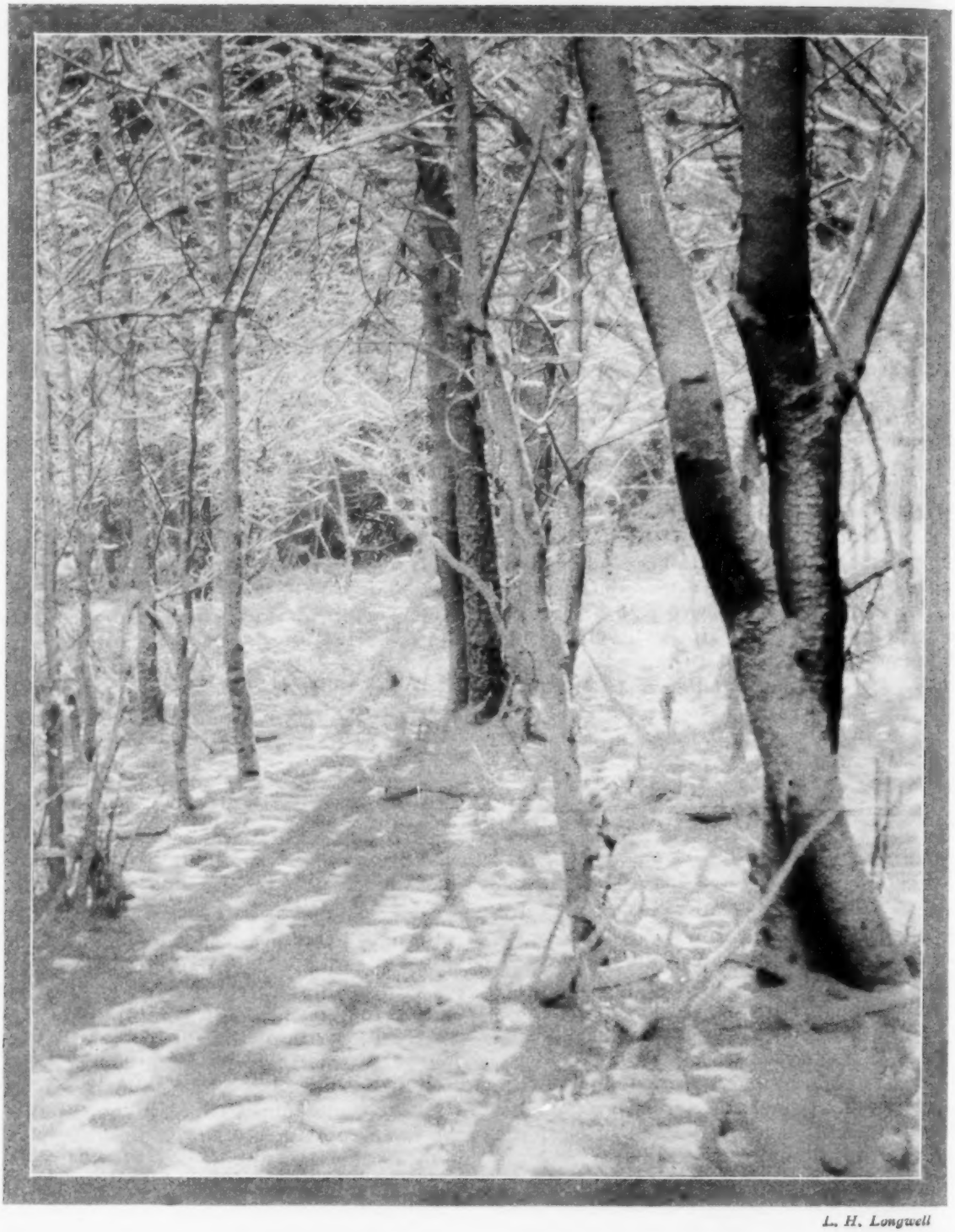
Certain drugs, notably benzol, have such properties and have been used for this purpose. More effective, however, is the application of x-rays or radium to the areas in question. These are, in the case of myeloid leukemia, the long bones, where the radiation acts on the marrow, and the spleen, and in the case of the lymphatic form of leukemia, the lymphoid tissues such as the spleen.

Radiation will produce, when properly applied with careful avoidance of excess, definite and sometimes marked remissions lasting from six months to one year. It is essential that the blood is examined frequently during the treatment in order that undue depression of the blood-making system as a whole with the production of an extreme and even fatal anemia may be avoided.

### *Animal Research a Great Aid*

The treatment at best is only palliative and must remain so until the cause of the disease has been discovered and its mechanism worked out, both of which are essential to the evolution of definite and satisfactory methods of treatment.

As has been said, it is fortunate that birds and certain mammals are subject to a similar if not identical condition as this renders it possible to study the disease under conditions impossible in the human being. For only through such study can it be hoped ever to discover ways and means for the cure or prevention of these peculiar "tumors of the blood."



*L. H. Longwell*

# Winter Sun and Shadow

**INVITING scenes on paper — these winter landscapes. They bring better returns when personally inspected. Turn your back on book and fireside and let the winter's cold whip your cheeks and whet your appetite**

# Science Aids the Canners

By E. F. KOHMAN

THE story of Lavoisier's discovery of the rôle of oxygen in life was recently heard over the radio. We were told how Lavoisier found that if the oxygen supply of mice was cut off, they would rapidly succumb. However, if oxygen was promptly readmitted into the oxygen-free chamber, the mice revived and resumed their normal frisky manner of activity. From this was deduced a glowing picture of a certain tooth paste, which, on being used in the customary manner, liberated life-giving oxygen.

A benumbed conscience would be necessary to develop such a glowing picture of the rôle of oxygen in foods. Yet every raw vegetable and fruit consumes oxygen just as did Lavoisier's mice. Their avidity for oxygen is even greater than that of mice. Without oxygen, mice promptly succumb to a point at which they can no longer utilize it. Not so with raw vegetables and fruits. They continue to evolve carbon dioxide in not greatly diminished amounts long after their oxygen supply is cut off.

Oxygen is, strictly speaking, not life giving. Oxygen is corrosive and destructive. Oxygen in Lavoisier's experiments was not the life-giving principle. The oxygen destroyed that the mice might live. Oxygen is admittedly essential in every life process, but in every life process the direct rôle of oxygen is to rob the energy from some substance and this energy, thus liberated, is the real life-giving principle. Oxygen is, in practically every instance, inimical to preservation. With few exceptions, this is true in every phase of the food industry and it is particularly true in the preservation of foods by canning. The purpose of foods is to maintain life, and the purpose of the preservation of foods is to stabilize the life-giving principles. The energy supplied by food is one of its life-giving principles.

### *Energy Value of Vegetables Declines*

Considerable losses in energy value may occur under ordinary conditions of handling vegetables as the result of oxidation. Benoy held raw vegetables for twenty-six hours at 30 C. (86 F.). Under these conditions carbon dioxide was evolved equivalent to 13.6 per cent of the energy value in asparagus, 6.4 in lettuce, 6.3 in green beans, 5.2 in okra, 4.5 in green onions, 3.1 in carrots, 2.6 in tomatoes, and 2.0 in beets.

This characteristic of all vegetables and fruits is of such profound significance that it deserves more attention. Such activity is generally designated as the respiratory process. Every vegetable and fruit, while in the raw state, is endowed with enzymes that cause oxidation of some of the food materials in them as well as bring about other chemical reactions. These enzymes are so active and their demand for oxygen so great that if oxygen cannot be obtained from the air, it will be obtained from some of the food tissues. When sugar is present, it is most likely that the oxygen will be derived from the sugar and a process simulating the anaerobic activity of micro-organisms results, similar to fermentation by yeast in the absence of air. When oxygen is extracted from sugar for oxidation purposes under such anaerobic conditions, a residue relatively poor in oxygen is left behind. Thus, undesirable by-products result. Among these usually alcohol and aldehyde are usually present.

### *How Off-Flavors Develop*

This enzymic activity in raw vegetables and fruits may under certain conditions have adverse effects. For example, when an apple or a potato is peeled, darkening of the ruptured cells on the surface promptly occurs. If an apple is bruised as by dropping on the floor, this bruised area undergoes increased enzymic activity, as a result of which its flavor changes in a few minutes; in time the bruised portion becomes brown in color, tough and dry in texture, and a large part of its food value is lost. When orange juice is expressed from the best container that so far has been found for orange juice—that is, from the healthy skin of an orange—this juice promptly becomes "untasty." When corn is cut off the cob as for canning and the kernels are more or less macerated, it readily develops off-flavors. Its acidity changes measurably. If the canner did not handle this product with great expedition, there would result an abnormal flavor in the canned corn. By the continuous process that he has developed, the canner can observe expedition that would be impossible for the housewife to simulate with her limited equipment, and without which the canning of cream style corn would be out of the question.

Any bruising that ruptures a vegetable cell induces accelerated enzymic activity and brings

about abnormal conditions. Freezing to the point of congealing is disastrous to vegetable cells, hence the rapid deterioration of frozen vegetables and fruits upon thawing. In the harvesting, handling, shipping and storage of raw vegetables and fruits, these matters have a significance far out of proportion to the attention that has been given them. The effect on vitamins is even more pronounced in some instances than on energy value or flavor.

Raw potatoes were known to have antiscorbutic properties before the discovery of vitamins, as evidenced by their use on early sea voyages. Some years ago Bezssonoff became curious to know whether the juice of potatoes possessed this property. He ground potatoes and pressed out the juice by means of a hydraulic press and fed the juice and the residue, or pulp, separately. Although they were fed within two and one-half hours after the process was begun, he found neither the juice nor the pulp to have appreciable antiscorbutic value; on combining the two in their original proportion, the combined mixture no longer had antiscorbutic properties at all comparable to the original raw potatoes. In a study of shredded carrots, it has been found that the vitamin C content may be lowered by approximately 25 per cent if the shredded carrots are held from one to three hours before they are fed.

Fortunately the same enzymes whose activity may be so disastrous can frequently be directed into channels of great usefulness. Canners have worked out a unique process for the canning of apples. In this the respiratory process is employed to free the apples of oxygen. Thereafter they may be canned and practically their full vitamin C value retained, whereas, without such treatment, it is largely destroyed.

### *Making Sauerkraut*

The manufacture of sauerkraut presents an interesting illustration of the rôle that oxygen may play in the destruction of vitamin C and how this may be avoided. Cabbage stored in the head gradually loses its vitamin C content. The shredding of the cabbage, as is evidenced by the experiments cited with shredded carrots and potato juice, might entail an undesirable set of consequences were it not for the conditions prevailing in the vat in the manufacture of sauerkraut. It is known that the activity of micro-organisms in the fermentation process in the manufacture of kraut promptly creates anaerobic or air-free conditions. The fermentation process would quickly consume the oxygen present, since this makes such a strong demand for oxygen that it is taken from the sugar in the cabbage and as a result a certain amount of alcohol is produced. In the commercial manufacture of kraut, the huge volume of the vat results in the kraut being effectively protected from the air. Thus the kraut, months after shredding of the cabbage employed in its manufacture, is still potent in vitamin C. Moreover, this may be retained in the canned products as shown by Clow, Parsons and Stevenson. But, as also shown by these investigators, not all canned kraut retains this vitamin C to the maximum extent. The canner of kraut, when he has the data available to show him the procedure to follow during the canning process, will have the facilities to take steps in this connection that will be impossible for the retail distributor or the housewife to take. The canning of kraut, therefore, should be a means of distributing kraut of a higher vitamin content than is possible in any other way, as distribution through other channels must necessarily entail more or less exposure to the atmosphere.

### *A Definition of Canning*

I recently defined canning as "the art of preserving seasonal products, and others susceptible to rapid spoilage, as far as possible in their natural state with all their nutritent qualities intact and in a form that renders such products more or less stable and capable of being distributed at all times to all places." This is a big bill to fulfil. It virtually means the elimination of the word "season" from the food lexicon. Although great achievements have been made, the fact that the canning industry is young is sufficient evidence that its ultimate goal has not yet been attained.

# Light

## *Six million are blind*

*Never knowing the sunset, never the dawn,*
*The April yellow of jonquils, the August wheat,*
*Or the sumach fires of autumn, these march on—*
*An army in darkness that will not sound defeat.*
*A peaceful army, with blighted, stumbling tread.*
*With the light, the light, gone out! With the banners dead.*

*Stay me, courage. Brighten my days with song.*
*I watch the poppies blow and the clouds ride by.*
*I know the gray of the rain and the gold of the sun.*
*My spirit feasts on a rainbow-painted sky.*
*Brand me coward, mantle my brow with shame,*
*If I falter and weep in a world of light, of flame!*

—ROSE HENDERSON.

In a long series of cooperative studies by Teachers College of Columbia University, under the direction of Prof. W. H. Eddy and the National Canners Association, represented by myself, it has been demonstrated that each of the known vitamins commonly found in vegetables and fruits can be supplied in adequate amounts by some canned food over the usual test period. By taking cognizance of fundamental principles, such as are described above, as well as others that cannot be described in such limited space, the foregoing definition is fulfilled to a remarkable degree by the canning industry.

### *Rats Thrive on Diet of Canned Foods*

But have all the vitamins or other dietary essentials been discovered? Is the usual test period adequate to demonstrate conclusively dietary sufficiency? Even to these questions we are now arriving at answers in the cooperative studies mentioned above. Our results were recently reported before the American Chemical Society. For more than a year both rats and guinea-pigs have been fed and reared on a diet made up completely of canned foods sterilized by heat. They have reached the sixth generation. Growth has been as rapid, reproduction as prolific, litters as large, and lactation as abundant as can be expected from these species of animals. No dietary difficulty of any kind has been encountered. Every period of five days the animals are given five different canned foods so selected as to constitute a balanced ration. The different foods are not mixed, but each animal is permitted to eat according to its likes and dislikes. At the expiration of each fifth day, a new combination is set before the animals. So far forty-nine canned foods have been fed in seventy-four combinations. This variety probably accounts for the animals surpassing those on the usual laboratory stock diet.

Of equal moment are other studies reported by us at the same meeting of the American Chemical Society. It is an interesting fact that although we are told to eat raw vegetables and fruits to secure an adequate supply of vitamin C, there is no record of head lettuce and celery, the two vegetables eaten raw in greatest abundance, ever having been tested in this country for their vitamin C content. Consequently, over a period from May to October these vegetables were purchased daily in prime condition from New York markets to have their vitamin C potency determined. We must admit surprise at the values found. Canned turnip greens were being studied at the same time. Four Gm. of the latter were superior as antiscorbutics to 10 Gm. of celery or 15 Gm. of head lettuce. No explanation is afforded by available data for the low vitamin C value of these raw vegetables. However, attention is called to the fact that the turnip greens—as is usual in the canning of vegetables—were canned a few hours after harvesting in a region in which they grow to the best advantage. In contrast to this, head lettuce and celery are shipped from afar and frequently stored for long periods, thus permitting enzymic activity full play. It is well recognized that green vegetables are also far superior to bleached vegetables in vitamin A.

### *Lettuce Salad May Lose Supremacy*

The canner, by recognizing facts disclosed by fundamental research, by turning to his advantage certain properties of vegetables and fruits that in other directions may have deleterious consequences, by employing processes made possible only by the machinery of industry, can in many ways accomplish what is impossible in any other way. We are told to eat salads twice a day for an adequate supply of vitamin C. It now appears that if head lettuce or celery is the basis of the salad, we may secure more vitamin C by serving canned peas, tomatoes, spinach, peaches or pineapple. All the facts about all the available foods are as yet by no means known. What is known may well be taken to assure us that, with reasonable discretion and intelligence in choosing our foods, our every dietary need may be amply supplied from a variety of abundant products.

# When Do We Eat---and What?

By WILSON D. WALLIS

"FOR IT has pleased God to make man a composite animal, and where there is nothing to refresh the body, the mind will languish," observes Boswell. "When do we eat?" and "What do we eat?" have been millennial and perennial questions; they were probably the origin of human language. The way to a man's heart is through his stomach and his stomach is near his larynx, the behaviorist's mind. Perhaps this is what the seventeenth century poet had in mind, that is, in his larynx, when he wrote:

"The empty spit
Ne'er cherished wit—
Minerva loves the larder."

This might stimulate the modern versifier to poetize this advice to the ladies:

The empty man
Catch if you can—
You'll have to cook the harder.

There is a German saying, on which a philosophy has been built, howsoever hazardous, to the effect that "Mann ist was er isst." This does not signify that he who eats an inferior quality of the piscatorial dish is himself a poor fish, or that he who eats mutton is sheepish, or yet that he who partakes of pork is piggish; it means merely that his mode of life is determined by the manner in which he secures his victuals. Food habits vary widely.

A measure of truth inheres in this German saying. Certainly it savors of the facts in the simpler cultures, in which food is not to be had at the grocery store or at the cafeteria. If man must obtain his food with spear, bow and arrow, and club, he leads a different sort of life than if he secures it, or ensures it, with hoe, plough or sickle. The noble male must do the hunting, whereas the woman, though she may not plod after the plough, can at least dig in the dirt.

*The noble male must hunt; the woman can dig in the dirt.*

We know much about the stone work of our remote ancestors of prehistoric times, but we have little direct information about their food. Our knowledge is by way of negative inference. We know that paleolithic man was not an agriculturist or a keeper of herds or flocks, and the absence of charcoal from early paleolithic sites suggests that this early man was not adept at cooking. We picture him, therefore, as hunter and fisher, prowler and poacher on nature's preserves, gathering wild seeds and berries, eating his food raw or indifferently cooked in an ancient manner.

*Neolithic man invented the bow and arrow.*

By the beginning of the Middle Paleolithic Age, some 50,000 years ago, man was building hearth-fires, which doubtless made his food more palatable and his camp circle more comfortable. But of these matters we have only the records of charcoal. The markings on certain bones of animals, found at camp sites, indicate that these scratches were made by human teeth and not by the canines and incisors of any wilder animal. We know, too, that paleolithic man cracked the long bones in order to secure the marrow, and doubtless by this means many a tasty morsel was enjoyed by the lusty hunter of wild beasts after a few days of exciting scouting about. Some believe that he occasionally feasted on his fellow man, but of this fond fellowship we really have no evidence; let us therefore give him the

*Paleolithic man cracked the long bones for marrow.*

benefit of doubt. Perhaps he did not love his fellows with such high relish; and even if he did there are self-imposed limits on the available supply of human flesh. At best, therefore, his cannibalism could have been but an incident in the season's supply of food; it can scarcely have been a daily practice, for thus he would soon eat himself not only out of house and home but out of friends as well.

The great step in food economy came some ten thousand years ago with the beginning of the Neolithic Age, when man invented the bow and arrow. With it he greatly increased his range and also, doubtless, added considerably to his larder. Then, too, he began to make pottery, and this industry gave him water-tight vessels and storage jars impervious to insects and rodents. Most momentous of all, he embarked on the domestication of animals and the cultivation of plants, and thus exerted over the food supply a control that predecessors had not known. Now, indeed, he could control the food supply; he could lay by food stores for the future, in confidence that they would be available when needed. For the first time, he could know both what he would eat and when he would eat. He could issue early invitations to the feast and need not perforce wonder whether there would be food at hand for the guests. His flesh pots were no longer contingent on the chase; he would not have to search for wild seeds, for his fields supplied better and more dependable grain.

*Grasshoppers were a part of the native diet in the semi-desert regions.*

Neolithic man domesticated the dog, though probably not for food, the cow, the goat, the sheep and the pig; he cultivated wheat, and soon he added barley and millet, to which Metal Age man later contributed rye and oats. His roast and his loaf of bread were now assured. With cereals came civilizations, with agriculture the higher culture.

Somewhere on the earth's surface, almost every possible food is utilized; indeed, many of them we would consider impossible. The Bandas, Mandjas and other tribes of equatorial Africa gather termites in basketfuls in the winter season and find these ants a delicious food. The Australians are fond of the witchetty grub, which hides in the bark of trees; they say it is sweet and juicy. In New South Wales the natives gather in large numbers by the rock surfaces on which quantities of moths have settled; these they stifle by smoke from fires on the ground and collect in large quantities. Grasshoppers and other insects were once eaten in the semi-desert regions of the Western part of the United States. Here the natives sought sustenance from almost everything that crawls, creeps, runs or flies. The Eskimos did not waste the lice that they obligingly picked from a friend's head, or perchance from their own, but made a meal of the intruders—or at least treated them as a vanishing relish, elusive but gustatory.

Such foods, however, are not the mainstay of life; they are merely the trimmings. In most tribal cultures, one or two staples constitute the dependable and habitual food. In some areas, the character of the food changes emphatically with the seasons, and in some the food of one day differs only in quantity from that of any other day, irrespective of the season of the year. Thus the diet of the Eskimos is made up almost exclusively of flesh, though the types of meat diet have a seasonal rotation. In the winter when the people camp by the sea, they eat only products of the sea, in particular, seal and walrus, and whale when they can secure it. These meats are supplemented by fish, mainly salmon. In the spring, the people abandon their snowhouses, which have already begun to drip water, and leave the seashore for inland parts. From that time until cold weather returns, they live on land animals and on birds—deer, musk-ox, fox, ducks and geese. The Greenland Eskimos secure great quantities of small birds that frequent the cliffs; these constitute a highly valued delicacy, being eaten entire, minus only the feathers.

Other tribes have other foods and other food habits. The Indian tribes of the west coast of North America, from Alaska to northern California lived mainly on salmon. This was a dependable supply of food that came in the rivers and delivered itself F.O.B. at the very doors of the people. They, of course, also secured land animals and, like the Eskimos, gathered berries, of which they were fond. In northern and central California the Indians used acorns as a source of food.

*Salmon delivered F.O.B. in Northwest.*

They soaked them to extract the tannic acid and ground them in a mortar into a meal that was highly nutritious. Wild seeds were liberally utilized throughout this area, as in the adjacent Rocky Mountain plateau region. In the plains area, the Indians subsisted on buffalo meat, which was as indispensable to them as dates are to the Arabs in the Sahara desert.

The Northeastern Indians, from Labrador to New England, were hunters and fishers and collectors of berries. South of the St. Lawrence River, between the Mississippi and the Atlantic, and down to the Gulf, maize was cultivated. Generally speaking, the further south the area, the greater the dependence on maize, though the northern Iroquois of upper New York State were skilful cultivators of maize, which was their main food staple. The Indians of the Southwest lived almost exclusively on agricultural products, maize supplemented with beans and squash, though the Zuñi also kept flocks of turkeys for their fare.

*Birds are a part of the Eskimo's summer fare.*

The peoples of the higher civilizations of Central and South America, the Maya, Aztec, Chibcha and Peruvians were cultivators of maize, which constituted their main food supply. In the Amazon basin region, maize was supplemented by cassava. In the pampas region further south, the guanaco was the source of food. Its rôle there is comparable with the rôle of the buffalo before its disappearance from the plains of North America.

Thus foods have specific geographic distributions. In the Old World there are the great cereal areas of the older civilizations about the Mediterranean, in which wheat was the mainstay, while in Eastern and Southeastern Asia rice has been the important cereal from prehistoric times to the present. Many peoples were dependent on herds and flocks for food. Such was the case among the early Persians and Hindus, who utilized the milk rather than the flesh of the animals, and so too in Africa, where many tribes became keepers of cattle, but for the sake of the milk rather than for the flesh, which seldom was eaten and in many areas was never eaten. South Africa and East Africa formed a great cattle area, and even the primitive Toda of the Nilgiri Hills in India had valuable herds of buffalo. In all these areas the milk of the animals was utilized as food but the flesh was not eaten.

*Many tribes use the milk but not the flesh of cattle.*

The natives in the Pacific islands have been mainly fishers, though in some areas agriculture was practiced. There was no agriculture in Australia, but practically all the animals of that island continent were used as food, and so were many vegetable products, including the tuber of the yam, which in many of the Pacific islands was cultivated and was a main source of food. In New Guinea, at least in the Papuan Gulf region, the taro played an important part in the food economy and even in the religious life. Northern and Northeastern Asia was, of course, nonagricultural, and here fish and land animals furnished the food supply for that section of the continent.

The savage sometimes appears to be catholic in his tastes, but he is nevertheless sometimes finicky and would almost starve before he would eat certain foods that to us appear more palatable than some that constitute his daily diet. In many areas he has emphatic food prejudices. Certain foods may be tabu as a matter of custom, some as a matter of scruple, and some as a matter of conscience or religion.

The Jew will not eat pork, and indeed a number of "unclean" animals are forbidden him. The Mohammedan likewise eschews pork, and the Hindu will not eat any flesh. In most areas people will not eat snakes, though in some areas they have no qualms in the matter.

The Indian is horrified at our dish of frog legs, as we are at his dish of skunk or porcupine. In the plains area there were few species of fish that the Indians would eat, and in some tribes they would eat no fish. The Southwest tribes tabu all fish. The Navajo may be a "dirty" Indian, but at any rate he never stoops to the fish diet that characterizes his white neighbors. Some peoples eat the eggs of turtles but will not eat the eggs of birds.

Frequently too, there are sacred or totemic animals that are not eaten by the members of the cult or of the totem group, though other members of the tribe may eat them. To eat one's totem is generally regarded as sacrilegious, though in Australia the tabu does not hold.

*(To be continued)*

# "Professor" Rudolph von Walden

By ARTHUR J. CRAMP

"Heart Trouble the Deadliest of All Diseases Conquered by Discovery of Scientist!"

"Can Your Heart Do This? Heart Attacks and Angina Pectoris have been relieved permanently without drugs within 72 Hours!"

"High Blood Pressure! Hardening of the Arteries! Heart Trouble! Important Discovery of Scientist Through Which 95% of These Fatal Diseases Can Now be Relieved Successfully and Life Prolonged Without Drugs and Medicines."

"Specialist Advises How, Thru His Discovery of Cardio, Neuro and Gastro Vitamines, Your Heart Is Strengthened, Your Nervous System Revitalized, and Your Circulation and Digestion Improved."

PARALYSIS DUE TO HIGH BLOOD PRESSURE

Many a Promising Career Cut Short by Paralysis. Scientist Says High Blood Pressure Causes More Failures Among Business Men than Lack of Capital

*Announces Discovery of Method by Which 95 per Cent of These Fatal Diseases Can Now Be Relieved and Life Prolonged Without Drugs or Medicine*

*Here is a miniature reproduction of a full page advertisement of Rudolph von Walden that appeared in the Miami, Fla., Herald in January, 1930. In it von Walden describes himself as a "scientist" and his scheme as "the most successful method in existence!"*

THESE are some of the screaming headlines, in large, black type, that have been spread across the pages of such newspapers as have been willing to accept the advertising of the self-styled "Professor" Rudolph von Walden of Connecticut, New York, New Jersey, Georgia and Florida.

"Professor" Rudolph von Walden is distinctly upstage. He has presence; he has poise; he has a distinguished appearance even when he is "mugged" (photographed) by the police. His sartorial splendor, it is said, befits the millionaire that he is reported to be. The gray and luxuriant whiskers, parted meticulously in the middle, must in themselves be a commercial asset of no mean worth. The title "Professor" seems to have been plucked by von Walden out of the vasty deep, for he is not and never has been a professor in any reputable scientific institution. Neither is he a physician nor licensed to practice medicine in any state in the Union. He has not even the dubious honor of belonging to the chiropractic, osteopathic, naturopathic, seventh-son-of-seventh-son, or any of the fifty-seven varieties of cults that infest the American scene. Yet, newspapers report that it has been estimated that in his business of treating human ailments, he takes in between $6,000 and $10,000 weekly and has a personal fortune of between one-half and one million dollars.

Rudolph von Walden was born in Germany nearly seventy years ago and came to the United States in 1884. For some years he played up the "von" part of his patronymic. Then, the late unpleasantness made "vons" an advertising liability rather than an asset and Rudolph von Walden became R. V. Walden. He dubs himself a "scientist"; in fact he used to call himself a "German scientist." He and his sons have brought into being a number of "Walden Institutes" in different parts of the country. One of the first—if not the first—was the "R. von Walden Institute" of Cincinnati,

said to be "Devoted to Diseases of the Heart, Angina Pectoris, Dropsy, Etc." Since that time, there have been Walden Institutes operated from New Haven and Hartford, Conn., New York City (various addresses), Newark, N. J., Atlanta, Ga., and St. Albans, Long Island.

Rudolph von Walden has some interesting sons. The newspaper files prove it. There is, for example, Gerald, who for a time conducted a Walden Institute at Hartford, Conn., in connection with his father. Then, the papers reported that Gerald was suing his own father for alienating the affections of his (Gerald's) wife. Another son, Sherman, is a chiropractor and conducts an "institute" at Atlanta, Ga. A third son, Edward, variously described by the newspapers as the "Metropole Bandit" and the "Flappers' Friend," has distinguished himself in other fields of human activity.

In May, 1916, the newspapers reported that "Professor" Rudolph von Walden had been found guilty of practicing medicine without a license at Portsmouth, Ohio, and had been fined $300 and costs and sentenced to a year's imprisonment, a sentence that was suspended on the understanding that von Walden get out of the state. From reports published at the time, it appears that von Walden went to Portsmouth to treat a man whose condition reputable local physicians had previously pronounced hopeless. Von Walden is said to have collected $250 from the family, and shortly thereafter the man died.

### *Arrested in Alabama*

In January, 1917, Alabama papers reported that Rudolph von Walden had been arrested in Mobile, again on the charge of practicing medicine without a license, but the papers do not seem to have carried any record of the outcome of this case.

In October, 1917, the official journal of the medical profession of the state of Tennessee—the *Journal of the Tennessee State Medical Association*—published a letter signed by two reputable physicians, who reported the case of a Mr. K., who was a brother-in-law of one of these physicians. It appears that Mr. K., who had had organic heart disease for many years, fell into the hands of Rudolph von Walden, at the time he was operating his Cincinnati "institute." From the story it seems that von Walden charged Mr. K. $500 in advance and kept him in Cincinnati long enough for the check to go through the clearing house. Just what else von Walden did to Mr. K. will never be known, but he finally sent the man home, telegraphing ahead to Mr. K.'s wife, suggesting that she meet her husband at the train, as he was "not very well." This statement was probably the most conservative ever made by von Walden, for when Mr. K. was met at the train by his wife and family physician, he was unconscious and died three hours later. Under threat of legal action, von Walden was made to disgorge the $500 to the widow.

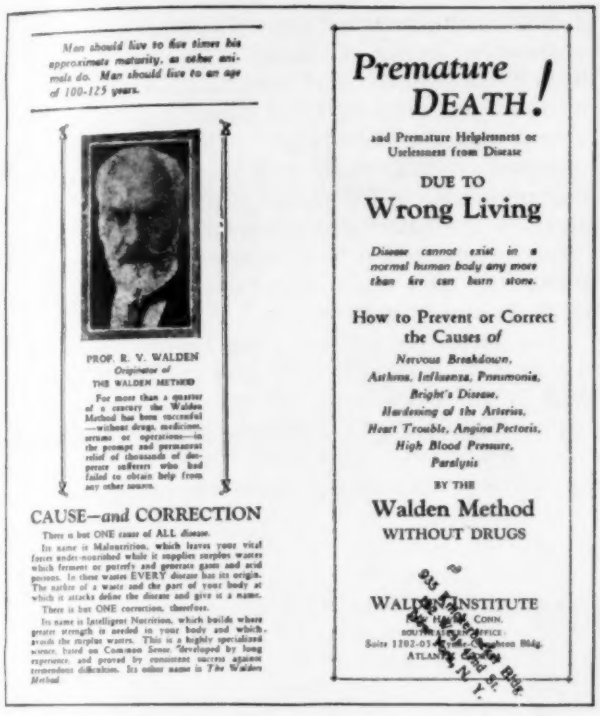
Florida papers in March, 1921, reported that Rudolph von Walden had been arrested in St. Petersburg, although they apparently carried no further information on this case. Papers in Richmond, Va., during January, 1924, reported that Rudolph von Walden had been arrested by the police of that city, again on the charge of practicing medicine without a license. At the same time, the police department of Richmond wrote for, and received from, the Bureau of Investigation of the American Medical Association such data as the bureau had on von Walden.

### *An Amusing Court Decision*

Von Walden was reported held on two charges—that of practicing medicine without a license and that of having illegally in his possession 3 quarts of whisky. The Richmond police are reported to have said, at the time, that von Walden evidently had some "influence behind him in the state of Georgia as while in jail [in Richmond, Va.] he called some town in Georgia and asked his bankers there to wire to a bank in Richmond, asking them to honor his check for $1,000, which was given to some local attorneys" and that "the Georgia bank immediately wired this information and the check was honored." When von Walden's case was called, it was dismissed! According to the newspaper reports, no evidence was produced to show that he practiced medicine and—most delicious of all—the "professor" was able to convince the court that the 3 quarts of whisky found in his possession were "being used in connection with his professional work."

In 1930, Rudolph von Walden made a tactical error. He went to Hartford, Conn., to ply his trade, and Hartford has a Better Business Bureau with a live personnel. After prescribing

*Business with the von Waldens is not what it used to be. It was not so long ago that Rudolph was carrying full-page advertisements in metropolitan dailies; today the small display and even the classified advertisement columns must perforce suffice. The depression has its recompenses.*



*Man should live to five times his approximate maturity, as other animals do. Man should live to an age of 100-125 years.*

PROF. R. V. WALDEN
*Originator of*
THE WALDEN METHOD

For more than a quarter of a century the Walden Method has been successful —without drugs, medicines, serums or operations—in the prompt and permanent relief of thousands of desperate sufferers who had failed to obtain help from any other source.

CAUSE—and CORRECTION

There is but ONE cause of ALL disease.

Its name is Malnutrition, which leaves your vital forces under-nourished while it supplies surplus wastes which ferment or putrefy and generate gases and acid poisons. In these wastes EVERY disease has its origin. The nature of a waste and the part of your body at which it attacks define the disease and give it a name.

There is but ONE correction, therefore.

Its name is Intelligent Nutrition, which builds where greater strength is needed in your body and which avoids the surplus wastes. This is a highly specialized science, based on Common Sense, developed by long experience, and proved by consistent success against tremendous difficulties. Its other name is *The Walden Method*

**Premature DEATH!**

and Premature Helplessness or Uselessness from Disease

DUE TO

**Wrong Living**

*Disease cannot exist in a normal human body any more than fire can burn stone.*

How to Prevent or Correct the Causes of

*Nervous Breakdown, Asthma, Influenza, Pneumonia, Bright's Disease, Hardening of the Arteries, Heart Trouble, Angina Pectoris, High Blood Pressure, Paralysis*

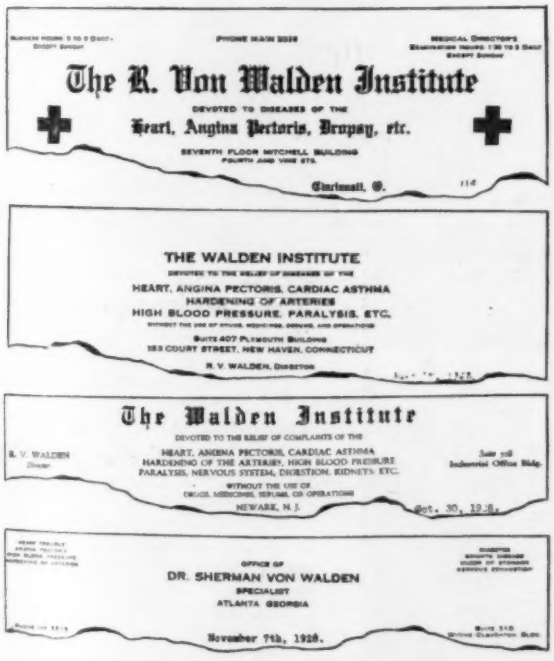
BY THE

**Walden Method**

WITHOUT DRUGS

WALDEN INSTITUTE
[illegible] CONN.
SOUTH ATLANTIC OFFICE:
Suite 1102-03 [illegible] Building
ATLANTA, GA.

*Greatly reduced reproduction of part of a piece of von Walden ballyhoo which in the original measured about 15 inches by 17 inches. Note that, according to von Walden, all disease is caused by malnutrition. There is but one cure: "The Walden Method." To the quack the complicated processes of the human body in health and disease are so simple; a cure is even more elementary—just a formula.*



The R. Von Walden Institute
DEVOTED TO DISEASES OF THE
Heart, Angina Pectoris, Dropsy, etc.
SEVENTH FLOOR MITCHELL BUILDING
Cincinnati, O.

THE WALDEN INSTITUTE
HEART, ANGINA PECTORIS, CARDIAC ASTHMA
HARDENING OF ARTERIES
HIGH BLOOD PRESSURE, PARALYSIS, ETC.
SUITE 407 PLYMOUTH BUILDING
183 COURT STREET, NEW HAVEN, CONNECTICUT
R. V. WALDEN, DIRECTOR

The Walden Institute
DEVOTED TO THE RELIEF OF COMPLAINTS OF THE
R. V. WALDEN
HEART, ANGINA PECTORIS, CARDIAC ASTHMA
HARDENING OF THE ARTERIES, HIGH BLOOD PRESSURE
PARALYSIS, NERVOUS SYSTEM, DIGESTION, KIDNEYS, ETC.
WITHOUT THE USE OF
NEWARK, N. J.

OFFICE OF
DR. SHERMAN VON WALDEN
SPECIALIST
ATLANTA GEORGIA
November 7th, 1928.

*Some von Walden letterheads (greatly reduced). At the top as used in 1914 in Cincinnati; the New Haven, Conn., letterhead, vintage of 1922; the Newark, N. J., office in 1928 and Sherman's letterhead also in 1928.*

a course of medical treatment for an investigator for the Hartford Better Business Bureau, Rudolph von Walden was arrested on a charge of violating the state healing arts law. On June 3, 1930, von Walden was fined $200 and costs. While von Walden gave notice of appeal it was, apparently, a bluff, for the authorities report that he paid the fine and costs.

Von Walden's method has been, in the past, to publish expensive advertisements, many of them occupying full pages of such newspapers as cater to such sources of advertising revenue. Those who wrote to von Walden in answer to the advertisements received plausible come-on letters with "consultation blanks" common to mail-order quackery. The prospective victim was urged to fill out the blank and return it to von Walden, who would, upon its receipt, send "a written analysis of your symptoms" free of all expense. Von Walden's diagnoses, or as he would call them "analyses," were surprisingly uniform. They smelled of the rubber-stamp. Practically all those that I have seen read:

> "I find upon examination that the origin of your symptoms is in your abdominal organs; your stomach, your liver, your intestines, and also your abdominal circulation. These must be corrected first, before you can get rid of your symptoms."

Curiously enough, this same stock diagnosis, word for word, has also been used by Sherman von Walden. Sherman, it will be remembered, is operating at present from Atlanta, Ga. In 1927, the Atlanta concern was known as the "Walden Institute of Vital Dietetics" with R. von Walden, "Director," and "Dr. Sherman von Walden, Consultee." Later, stationery carried the name "Dr. Sherman von Walden, Specialist in Heart and Arterial Diseases, Suite 310 Mortgage Guaranty Building, Atlanta, Ga."

Quackery of the von Walden type is hard to reach under any but state law, and state prosecuting attorneys are seldom overenthusiastic about bringing charges in cases involving medical fakers who liberally patronize local newspapers. Von Walden and his ilk cannot be reached under the postal fraud order, because the mails are used only in making the "contact," the remainder of the transaction, together with the payment of money, being personal. The national Food and Drugs Act cannot be invoked, as von Walden apparently sells no drugs in interstate commerce. The prohibition law seems equally helpless, when a man without medical training or license can claim to use whisky for "professional" purposes—and get away with it. The only federal agency left is the Federal Trade Commission, which has done so much good work in throwing the fear of the law into medical fakers who have otherwise considered themselves above the law.

Early this year, the Federal Trade Commission served a complaint on Sherman von Wal-

den, in connection with his exploitation of the so-called Walden Method evolved by Sherman von Walden's father, Rudolph. After stating that Sherman von Walden was selling the alleged von Walden Method "at prices ranging from $65 to $500, payable in advance," the commission declared that the so-called Walden Method of Rudolph von Walden will not cure the long list of diseases ranging from high blood pressure, heart attacks and paralysis through Bright's disease, asthma and uremic poisoning, and, further, that "the Walden Method is unscientific and does not cure diseases or human ailments through modern scientific methods, nor does it cure or aid in the cure thereof at all." The commission further pointed out that the Walden Method is not, as has been claimed, "promulgated by the greatest living authority, or by any authority, living or dead"; that it has not relieved thousands and that neither 95 per cent, nor any per cent, of fatal heart disease has been cured by the "Method." Further, the commission stated that many of the purported testimonials used in exploiting the Walden Method are false and misleading, in that "many were never given and many were induced by purchase and such purchase not disclosed to persons reading the same."

The hearings on this case before the Federal Trade Commission have not yet been held. It will be interesting to see whether it is going to be possible for the Federal Trade Commission to accomplish what state and other federal agencies seem to have been unable to do.

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# SOLARIUM *for* Convalescents

*A roof garden and pavilion for convalescent patients has recently been opened at Passavant Memorial Hospital, Chicago. Known as the Gertrude Keeley Terrace, it is for both winter and summer use. The decorative scheme is modernistic. Etched glass panels and a glass enclosed, illuminated fountain are special features.*

# Preventing Deafness in Small Children

By *Harvey D. Thornburg*

SAVE the hearing and you will save a great deal besides. The subject of the prevention of deafness in small children should be studied both as an immediate and as a remote problem. In approaching a study of this problem one is concerned not only with the prevention of handicapping deafness during the preschool and school ages but also with prevention of nasal catarrhs, at first little noted, and with deformities of the nose. The latter conditions slowly and insidiously increase until much later in life they will be found to have impaired hearing to the point of marked interference with occupation and recreation. They cannot be checked up on too early in their development.

Unfortunately, the complete restoration of hearing in such cases is usually impossible, although during the course of its impairment the victim has not been conscious of any difficulty whatsoever. Because of the great frequency of such hearing loss, the National League for the Hard of Hearing has been established, which with its local organizations is constantly at work preventing and ameliorating deafness.

Some idea of the great number of children handicapped by impairment of hearing may be gained from studies undertaken by the department of health in the Los Angeles City Schools. This survey has proceeded far enough to justify the statement that in any given primary school, including the first to sixth grades, seven out of every hundred children have hearing so much impaired as to offer a real handicap in their school work. No such survey has been undertaken on representative groups of adults because of the difficulties involved, but I do not hesitate to say that the figure representing those of the population generally suffering with definite hearing impairment must be well over 15 per cent.

The prevention of deafness is naturally a matter of the prevention of its causes which, for our purpose, can safely be grouped as including in their probable order of importance—

*Learning to walk results in frequent falls. A fall on the face may bring about a dislocation or deflection of the septum, and years later this may develop into a condition bringing on impaired hearing.*

colds, deformities within the nose, the common epidemic diseases of childhood, sensitiveness of the nose to some one or more articles of diet, and tonsil and adenoid disease.

Are colds more productive of deafness in

children than in adults? They are, for the reason that the ventilating tube of the ear, called the eustachian tube, is not fully developed and acts as an easy path for infection to that portion of the ear that lies just back of the drum. Any one can see the drum in a baby's ear in a good light because the canal leading into it is short, relatively wide, straight and horizontally directed, in contrast to its condition in adults, in whom it is longer, relatively narrow and directed downward and forward. Exactly the same conditions exist in the eustachian tube during the corresponding ages. The adult ventilating tube tends to shut infection out of the ear; the infantile one invites it into the region in which the delicate hearing organ is located. Running ears or even mastoiditis results, and during the course of either or both of these frequently this organ is permanently damaged.

### *Child's Sinuses Become Involved*

One feature of colds in small children that is often overlooked is involvement of the little cavities called sinuses that lead into the nose. This is due in part to the mistake of assuming that children do not as yet have sinuses. Such is not the case; even at birth certain of the sinuses are present in a well developed state and the full complement of them appears much earlier than is generally realized. All colds of more than a few days' standing are complicated by the involvement of at least some of them. Infected sinuses with occasional extension of the infection are the cause of frequently recurring colds at all ages and the overflow of their discharges into the back of the throat with a resultant catarrh of the eustachian tubes is doubtless the most frequent cause of deafness developing in adult life.

Another early cause for later deafness is deformity of the partition between the nostrils. This structure, called the nasal septum, is not one solid piece but grows from both above and below with the result that practically all through childhood there are lines of incomplete union in its central framework. These permit of lateral dislocation of parts of the septum when the child receives blows or falls on the face. Protect the growing child from facial bumps.

A frequent cause of accident is unsupervised effort at learning to walk. These dislocations or deflections of the septum, as they are called, grow worse as the years go by until finally a low-grade catarrh develops similar to, but milder and hence even more insidious, than the one I just described.

Epidemic diseases of childhood characterized by nasal discharge must not be overlooked as causes of early deafness. Their dire results are produced exactly as in the common cold except that they operate more rapidly and effectively. Too much stress cannot be laid on the importance of their prevention. The notion of our parents that they are necessary evils of life to be gone through with as early as possible was a sad mistake.

Another cause of early deafness, unfortunately too rarely considered, is the catarrhal reaction of many persons to one or more articles in the usual dietary. This is a complicated problem in each case not to be dismissed merely by a casual avoidance of so-called "mucus forming foods," because no such true classification exists. Selection of foods that will maintain a normal acid-alkaline balance is important and not always easy. Acid excess is much more frequent than alkaline but the latter is quite as deleterious. It is a sad fact that milk, eggs and cereal products are the most frequent offenders in the production of this type of catarrh, since substitution for any of them in any diet at any age is a difficult matter, particularly so in the case of small children.

### *Hearing Loss from Tonsil and Adenoid Disease*

Tonsil and adenoid disease of which so much has been said and written is important and, when present, is a prolific cause of hearing impairment. These structures must neither be left in nor removed indiscriminately. A great deal of judgment, patience and trial of other methods of prevention of catarrh is necessary to the determination of whether or not tonsils and adenoids, when apparently unhealthy, are to be removed or be permitted to remain, since their diseased state is more often a result of the catarrhal condition than it is a separate condition.

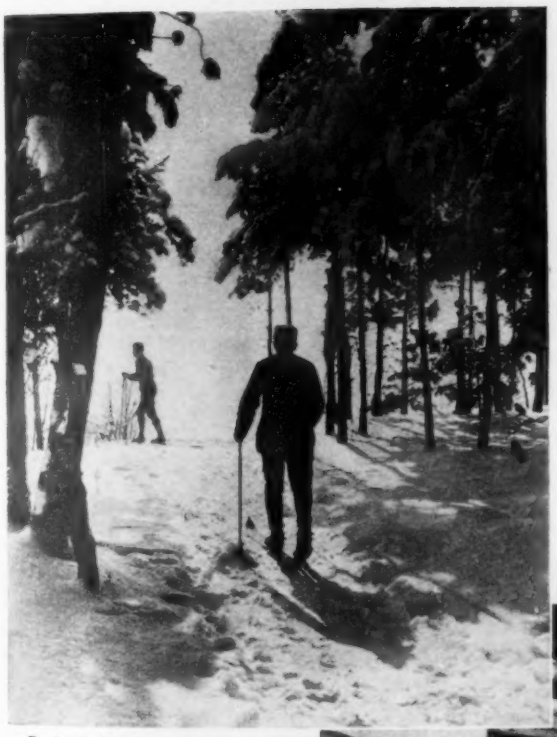
If I may be permitted to recapitulate, I shall say, "Save the hearing and you will have saved a great deal besides." To do so: (1) Prevent colds and properly care for those inadvertently acquired by your babies; (2) watch children carefully when they are learning to walk to prevent injury of the nose; (3) protect them from the children's diseases; (4) study their individual reaction to different foods, and (5) have a reasonable attitude on the question of the removal of tonsils and adenoids.

**HEALTH BUILDING while Snow Man building.**

*Acme*

*H. Armstrong Roberts*

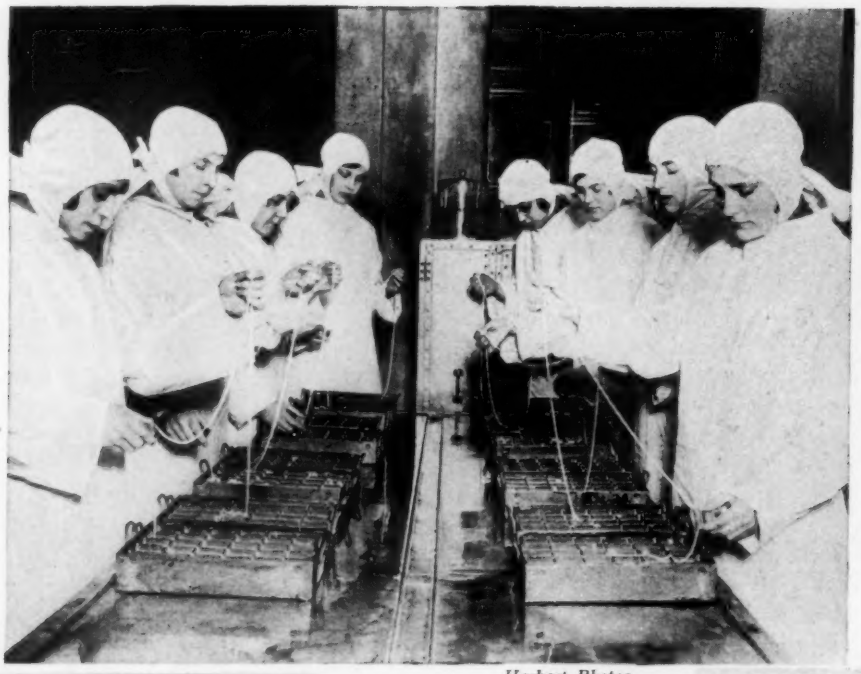
**Winter provides sports for all ages.**



*Burke & Koretke*

*Herbert Photo*

**Winter tennis is newest athletic venture at St. Moritz.**



HOSPITAL WORKERS IN LONDON PREPARE CATGUT for surgical uses. Profit is used for extra hospital beds.

*Acme*

*Herbert Photos*

*Herbert Photos*

The old water tower above was converted into an orphanage and day nursery in Berlin.

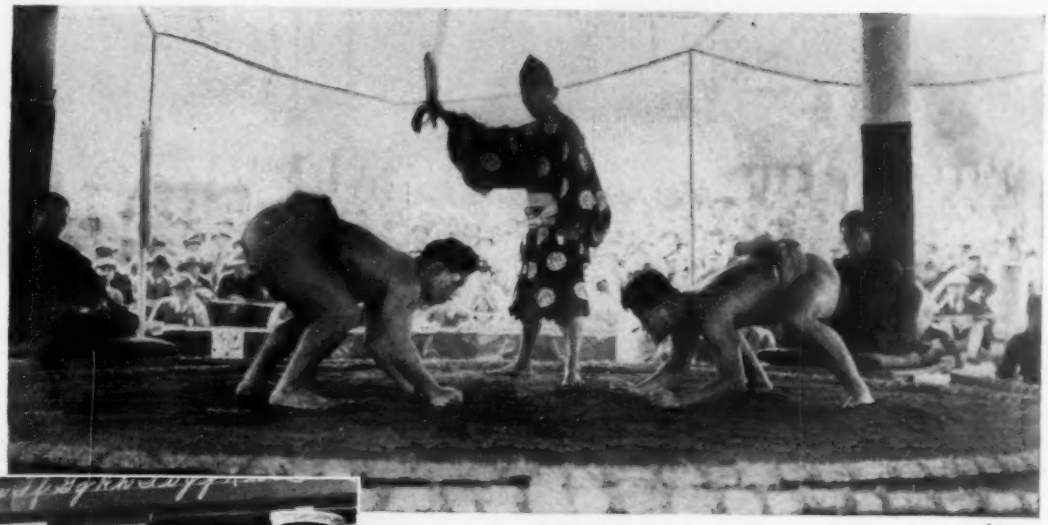
## *ATTAIN HEALTH RECORD*

Gertrude Heicks, 15, of Nebraska and William Sanders, 18, of Indiana were recently chosen as the 1931 health champions of the United States at the 4 H Club congress.

Common salt helped to produce this Alpine movie scene.

*Herbert Photos*

THESE JAPANESE STUDENTS ASSUME POSITIONS unlike wrestlers of this country.



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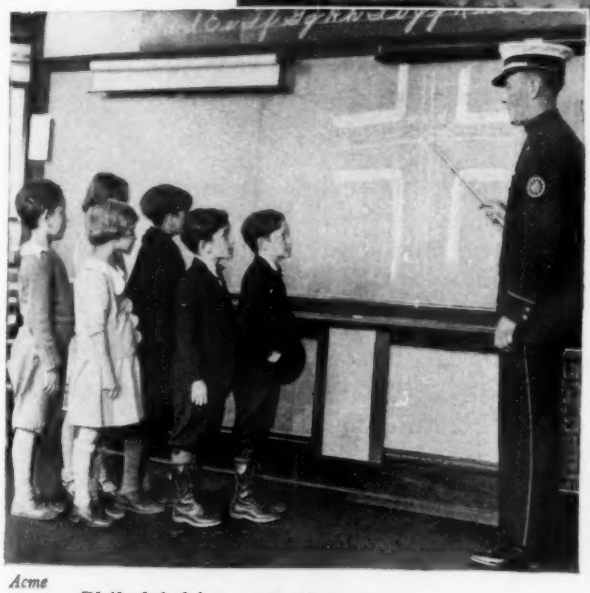

*Acme*

Philadelphia patrolman illustrates the wrong and the right methods of crossing streets.

FILIPINO RICE SOWERS WORK twelve hours a day knee deep in marshlands.

*Herbert Photos*

Paris traffic is stopped to allow school children to cross the street.

*Acme*

*The night before the county fair it was the same old story. The children could not seem to get to bed on time.*

# The Three

By

MILDRED WHITCOMB

JEFF TODD, at 15, was his father's right hand man. He was now permitted to drive the vegetable truck three mornings a week to the Chicago markets, 40 miles away. This meant getting up at 2 o'clock in the morning, snatching a hurried breakfast of fruit and warm cereal, and setting off in the dark down the broad cement highway that led to the city. There was no prouder boy alive than Jefferson Todd the first morning he made the trip alone. Now with several weeks' experience behind him he still thrilled to his task.

Mr. Todd, weary as he was with the heavy labor and responsibility of a large truck farm, could understand his son's enthusiasm. The start either in the pitch-black night or in the brilliance of the full moon, the steady and rhythmical hum of the motor and the truck's cheery rattle, the rich rose glow of the dawn stealing up behind his back, and finally the early morning bustle of city traffic and the hurried excitement of the big open market—these were moving experiences even to one accustomed to them.

Because Jeff had wanted it, Mr. Todd had promised him that some morning before the summer was over, he might take his young brother, Tim, along with him.

Tim, 10 years old, was a stocky, robust son of the soil. He helped set out cabbage plants, he pulled weeds from the strawberry beds, he picked potato bugs off the vines, he climbed out on limbs to get the furthermost cherries, and from bitter experience he had learned to put more raspberries in his bucket than into his mouth.

The middle Todd was Elizabeth. Twelve years old in April, she had twice in succession been voted the healthiest girl in the county. At the county fair next week she was again to compete. If she won this time, a graceful little silver cup with her name engraved on it was to be hers to keep always. Naturally she was eager to claim it.

It was little to be wondered at that the three Todd children were happy and healthy. They had lots of rich milk to drink, plenty of fruit and vegetables fresh from tree and vine, and other foods prepared in the tempting way that Mrs. Todd could cook and serve them. From morning until night they were busy outdoors, either playing in the big back-yard or helping father in the gardens and orchards.

Sunshine, fresh air and good food are almost enough to make any family gay and healthy. One thing more is important, and that is sleep. Most farm children get plenty of sleep, and the Todds had once been no exception. For it is never a hardship to go to bed when you have been working and playing in the fresh air all day long.

In the early spring the Todds had bought their first radio. All the neighbors had had radios for some years, but Mr. Todd had said that until the truck farm and their white house with the blue-green trimmings were every cent paid for, they would buy nothing but necessities. When by the combined thrift of mother, father and the three children the house and farm were all theirs, Mr. Todd purchased a fine radio. There was great rejoicing.

# Weary Todds

*At exactly 2:30 the next morning Jeff climbed into the driver's seat of the big vegetable truck, with Tim close beside him.*

During the last months of school the children were away all day and had their chores and home work to do in the evenings, so there was not much opportunity to listen to radio programs. In the summer it was just as difficult, for the children helped first with the strawberries, then with the cherry picking and later with the raspberries, blackberries and vegetables. These tasks, together with outdoor games with the neighbor children, took all of their daylight hours. Only the evenings were left to enjoy their delightful new toy, the family radio.

Consequently, for the first time in the history of the Todd family there arose a nightly argument about getting to bed.

"Please, daddy," Elizabeth would plead, "let me listen till the end of this story. Then I'll go straight to bed."

"I can't turn in until I hear Amos and Andy," Jeff would maintain, and as it usually happened even Elizabeth and Tim would sit around in their pajamas until 10: 15 when the famous pair signed off.

It wasn't as if the children could sleep late in the morning, for Mr. Todd always insisted that all the family get up early. The best work could be done, he said, before the sun became hot.

The night before the opening day of the county fair, it was the same old story. The radio was going full blast, and the two older children were listening eagerly to one program after another. Tim had been persuaded to retire early only under heavy penalty. If he was not in bed and asleep by 8 o'clock, he would not be allowed to go with Jeff before daybreak next morning on the long promised trip to Chicago.

Mr. and Mrs. Todd were to escort Elizabeth to the fair, where the final contestants for the county's healthiest girl were to be judged. Rather than leave Tim at home alone, it was decided that he could go with Jeff to the city market.

"Run along to bed now, dear," Mrs. Todd told Elizabeth. "You must get a splendid night's rest so that you will be fresh and fine for tomorrow."

"But, mother, the last chapter of the mystery story comes on at 9:45 and I simply can't miss that. I have heard all the others and I'm bursting to know who actually stole the pearls."

"Will you promise to go to bed immediately after?"

"Yes, mother. I promise."

"Hop along to bed, son," Mr. Todd called over his paper to Jeff. "Two o'clock comes around pretty fast."

"You've said it, dad," said Jefferson. "I'll take my bath now and get all ready for bed. Then I can slip back down and listen to Amos and Andy."

"You'll do nothing of the sort, young man." Mr. Todd spoke severely. "A fellow half dead for sleep can't be trusted to drive a truck along the road at night. Some time you'll fall asleep at the wheel. Then there'll be a smash-up. I don't want a cripple on my hands for the rest of his days, or even a damaged truck. What's more we can't afford to lose a day's receipts for the vegetables. The way this family carries on, I have begun to wish I had never bought a radio."

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"Oh, father," Elizabeth exclaimed reproachfully.

"Yes, and look at you, Elizabeth. You're dead tired now and still waiting up for that mystery story. There are dark circles under your eyes and you're nervous and jumpy. The doctors that examine you tomorrow are not going to miss those signs. You don't win silver loving cups by skimping on sleep every night."

Elizabeth tweaked her father's hair and planted a kiss on his head in the middle of his bald spot, which was just the size of a silver dollar.

"Don't be cross, Daddy dear. I'll sleep harder when I get to bed to make up for it."

At exactly 2:30 the next morning Jeff climbed into the driver's seat of the big vegetable truck, with a sleepy-eyed Tim close beside him.

"So long, mother," Jeff cried, for Mrs. Todd had risen too, to see that Tim was properly clothed and breakfasted. "We'll be back home long before you and Dad and Elizabeth get home with the silver loving cup. I slipped one over on Dad last night. He thought I was in bed asleep, but I pussyfooted downstairs and glued my ear to the radio. Amos and Andy were going fine."

"Good-by, my darlings," Mrs. Todd called, but the noisy truck drowned out her words. With a deft turn, Jeff swung the lumbering truck out of the driveway and headed toward the city.

At 4 o'clock that afternoon, Mr. and Mrs. Todd and a silent Elizabeth returned from the county fair. In Elizabeth's hands was an absurd balloon rooster for Tim. It had a bright red comb and brilliant yellow legs. When it deflated, it made a crowing sound. There was no sign of the silver loving cup.

Elizabeth walked into the house, her shoulders drooping with weariness and disappointment. There would be no tears, she had determined. It was strange how a doctor could look at a girl and tell she had not had enough sleep for several months. It was probably that her eyes were dull or maybe they had dark circles under them, as Daddy had observed last night. She would try to forget her grief in Tim's delight over the idiotic rooster.

"Timmy, Timmy," she called, blowing the gaudy creature to its full size and then letting the air out slowly, so that it crowed in its most melancholy manner. But Tim did not answer.

Mrs. Todd looked out the back window. "Why, the truck isn't here. The boys should have been back hours ago. Oh, I hope nothing has happened."

"Of course not, mother. Nothing could happen. Jeff is such a splendid driver. Father says so."

Mr. Todd came in the back door, looking a little worried. Just then the telephone rang.

"I'll answer," said he. He took down the receiver nervously.

"What's that you say? . . . No, Jeff isn't back yet. . . . What sort of accident?"

Mrs. Todd seized Elizabeth's hand excitedly.

"There, there, Mother," Elizabeth whispered protectingly. "Everything's all right."

Mr. Todd turned from the telephone. He spoke quietly.

"A vegetable truck with a Michigan license went into the ditch this morning on the road this side of Chicago. The driver, a boy about 16, was badly hurt. In fact, he has just died, unidentified. They thought at the local newspaper office that Jeff might know about it. The boy, they think, went to sleep at the wheel. The truck left the road and plunged down a steep embankment."

*"It's Jeff, I know!" cried Mrs. Todd.*

"It's Jeff, I know!" cried Mrs. Todd. "He had less than four hours' sleep last night." She sank weakly to the floor.

Mr. Todd picked up the limp figure and carried her to a couch. Elizabeth ran for a glass of water. But as the water ran gurgling from the kitchen faucet, Elizabeth's keen ears caught a familiar sound.

"Mother, father," she called. "The truck. I hear the truck."

Sure enough, it was getting louder now—the rumble, the rattle, the peculiar hum of their own truck. There was no mistaking it. It rapidly approached the farm house.

Elizabeth, her father and Mrs. Todd, strength again flowing back into her limbs, dashed out the door. Jeff and Tim, waving their hands from the high seat, were swinging deftly into the driveway.

In a moment, the boys were completely entangled in the embraces of their mother, father and Elizabeth.

"We're late, Dad," Jeff explained. "A terrible thing happened. Joe Phelps from over in the next county ran off the road and was hurt. They think he fell asleep at the wheel. Tim and I didn't hear about the accident until we were coming back. We saw his truck in the ditch and knew whose it was from the license plates. Some one said the fellow who was driving it had been taken to the hospital. Tim and I loaded as much of his fruit and vegetables as could be saved on our truck and took them back to the market in Chicago. That's what made us late. Joe will be glad to get the money we collected for his stuff."

"Joe's family will," said Mr. Todd. "They'll need it more than ever now that Joe is gone."

Then Mr. Todd told the boys of the telephone call, of their moment's terror lest it was their own Jeff who had lost his life. In the face of all the excitement and tragedy and their great relief, Elizabeth's loss of the silver cup seemed unimportant. Even to Elizabeth it no longer seemed so hard to bear. She was sharing with other members of the family the more serious thoughts of the day's events.

It was not quite 8:30 that evening when Jeff rose and turned his back on the radio. "If nobody minds, I think I'll turn in," he said. "A man who gets up at 2 every other morning to drive a truck can't get too much sleep."

"I'm half undressed already," called Elizabeth from the top of the stairs. "In five minutes I'll be getting a long health and beauty sleep."

As for Tim, he, with his rooster, had been in bed half an hour and asleep for twenty-nine and one-half minutes.

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# The Baby Suntan

*By Belle Coates*
*and*
*Gretchen Donahue*

There is a class of people, dears,
Whose failing makes me scowl;
Instead of washing clean their hands
They wipe them on the towel!

Instead of daily dozens which
Are nothing but a bore,
We take our morning exercise
In lusty Pillow War.
We slug and dodge, advance, retreat,
We whoop with all our might—
And feathers fly! That's how we get
That all-day appetite

## PITY PATTY PITT

*Pity Patty Pitt! Pretty Patty Pitt!*
*She is doomed to sit,*
*Nose close pressed to window pane;*
*Sighs for freedom—sighs in vain.*
*On her cheeks two awful lumps*
*Pretty Patty's got the MUMPS.*
*Horrid sign upon her door;*
*She'll stay in two weeks or more.*
*Other children play and run*
*Up and down, having fun.*
*Patty is quite out of it.*
*Pity Patty! Pretty Patty! Pity Patty Pitt!*

—L. MASON LYONS.

# HEALTH and the SCHOOL

*Edited by J. Mace Andress, Ph.D., 67 Clyde Street, Newtonville, Mass.*

## *A Scientific Spirit in Health Education*

IN THE last fifty years more has been accomplished for the physical and mental welfare of human beings than in all the preceding centuries of authentic history. It has been a glorious half century, so recent that men now living can easily recall those days when the cause and control of many epidemic diseases were unknown and when surgery was so crude that only the simplest operations were possible. At that time it was believed that all wounds to heal needed to suppurate or accumulate pus. Those were in the days before aseptic and antiseptic surgery.

Modern medicine and hygiene to a greater extent than other sciences have had to battle with superstition and ancient traditions. Primitive man imagined a world peopled by supernatural beings. Thunder and wind often were believed to be responsible for disease and good health. Evil spirits were the cause of all misfortune, including illness. The way to fight disease was to fight evil spirits. Masks, rattles and dances of medicine men were intended to dispel such evil spirits. Although such theories have disappeared in civilized society, many persons still believe in charms and amulets of various kinds for protection. The rabbit's foot, a horseshoe or semi-precious stones are still believed by many to ward off disease. Probably the great majority of people still believe that toads cause warts. Red flannel is still thought by many to be a cure for a sore throat if wrapped around the neck.

One of our modern superstitions has to do with patent medicines and nostrums. The desire for the restoration of health is so great and credulity so common that often such panaceas are accepted at their advertised value. Magic will always be attractive to large masses of persons.

The devotees of both magic and science think that they base their beliefs on evidence and experience, but the experience of the magician is based on the experience of an individual or a few individuals who have had no training in the interpretation of evidence. Usually they are interested in the exploitation of some method for personal gain. The human body has such remarkable vitality and power of adjustment that in many instances it cures itself. To the quack and his followers this leads to the conclusion that many a cure is due to their particular remedy. But science rests on the combined and compared experience of many students who often devote their lives to particular problems. Their findings are checked, tested and tried thoroughly before they are used in the treatment of human ills or in promoting positive health.

One of the crying needs in the teaching of hygiene even to children is to encourage scientific methods and a scientific spirit. Attitudes are not created by the mere recital of facts from the pages of a textbook. They result from experiences, careful observations, weighing and comparing of evidence and finally

the careful drawing of conclusions. The serious training of children from the kindergarten through the high school should result in scientific attitudes that should protect them from popular superstition and ordinary hearsay in dealing with mental and physical ills and healthful living. This should be one of the great goals of health education.

Fortunately there is a growing recognition of the value of a scientific spirit in our public schools. This is shown by additional courses in general science and the increasing number of books on science for children.

As an illustration of the cultivation of this scientific spirit with children I should like to refer to the units of instruction in health education undertaken by Jeanie M. Pinckney and her associates in the University of Texas. Some of these units have been published in activity books. Three that have come to the editor's desk are "Activities of Frogs and Toads," Grade IV; "Activities of Birds," Grade V; "Activities of the Honey-Bee," Grade VI. These are work-books that may be used with profit by other teachers. The pupil is presented with a series of problems that he is requested to solve. He learns by doing. In the solution of such problems the pupil experiences a variety of activities such as observation, discussion, reading, studying, reasoning, constructing and playing.

In "Activities of the Honey-Bee" the pupil is invited to make a careful study of bees based on the observation of a schoolroom hive and to record his observations in the work-book. He is told that there are many opinions and stories about the bees. Some of these are true and some are false. To find out which are authentic it is necessary for the child to follow the ways of a scientist. The following rules that would apply to other units of work as well are suggested:

1. Be careful in your observations.
2. Watch the same thing at different times and places.
3. Have patience to watch the same thing over a long period of time before you draw any conclusions.
4. Make careful notes of the things you observe. Be sure you record only things you actually see.
5. Test your findings and conclusions by comparing them with

what others have found and concluded.

Scattered through the book are many questions and suggestions referring to health. For example, since children in dealing with bees may be stung, they are told how to take care of a sting. They are asked to explain in their own words why they think the bees can eat such a large amount of honey and not get sick whereas boys and girls get sick if they eat an excess of sweet things such as candy or pie. There are many intriguing questions about foods. It is easy to believe that children who are able to pursue such projects become intently absorbed in their activities.

## TEACHING HEALTH

*(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)*

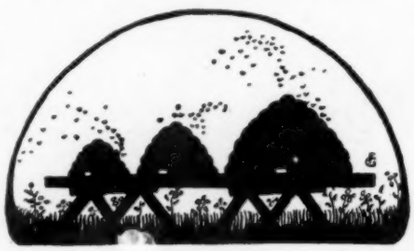
### THE THIRD GRADE STUDIES BANANAS

KNOWLEDGE of the value of different foods and the habit of selecting and eating right foods are essential phases of health activities in the school program for children. Young children are not primarily interested in health for health's sake and consequently it usually happens that the ordinary lesson is soon forgotten. But when health work is combined with other interests and activities it becomes vital and important to them and good habits are a natural result.

For these reasons the following objectives were chosen: to develop the child's natural interest in foods by carrying on an intensive study of one food; to lead the child to appreciate the relation between food and health and to form good health habits; to develop a realization of the interdependence that people bear to one another, and to have the child organize the knowledge gained in some permanent form.

In response to a message from the teacher on the bulletin board the children brought in various fruits, pictures of fruits, lists of the various kinds of fruits seen in a fruit store, prices of these fruits and fruit advertisements from newspapers and magazines. On a certain date that had been included in the bulletin board message, the group of children gathered around the teacher for an informal discussion of fruits and their uses and value to mankind. It was finally voted to make a special study of the banana. The pineapple was the children's second choice.

The period in which we discussed the children's knowledge of the banana was most interesting. A report of the conversation was made and each child was supplied with a copy for his banana book. We learned that almost every child knew when a banana is ripe and that the children's mothers would not allow them to eat an unripe



banana. The children also told of various ways of using bananas. During the same lesson questions began to come from the children and the next step was to form our problem.

There were fourteen questions and a paper containing these questions was given to each pupil for his note book. A few of the questions as examples of the intelligent questions that children will ask are as follows: What do people plant to get bananas? Do the people in banana countries have different ways of eating bananas? Where did bananas come from in the first place? How did the banana get its name?

The following list of sources of information was made by the class: books, newspapers and magazines, the radio, lectures, motion pictures and the stereoptican. The children made a survey of the books in the classroom. Through their reading they were able to check off several of their questions.

As our school is connected with a teacher training institution arrangements were made with a member of the education department for a series of broadcasts from an imaginary radio station, station GKB (Good King Banana). The same arrangement could have been made with another teacher of the same or of a higher grade. This necessitated the building of a microphone and the setting up of a studio in our classroom so that these broadcasts might be given to the children through our own station, which we called station DYB (Do Your Best). The broadcasts were given by different groups of two or three children.

Each broadcast was followed by a delightful period of informal group work to talk it over, ask and answer questions and look at pictures illustrating the broadcast. We had received from the United Fruit Company a number of good illustrated booklets. We also were lent a set of stereoptican slides that were most helpful.

A set of true and false tests and of completion and selection tests were made by the teacher. The children always enjoyed the tests and the finished tests were added to the banana books. One of the tests follows:

BANANA TEST

(Complete these sentences. Choose good answers from your banana vocabulary list)

1. Bananas are a ..... ..... In the United States.
2. Bananas grow in ..... countries.
3. There are many ..... ..... in Central America.
4. Baked bananas are very .....
5. Baby likes to eat ..... ..... They are good for baby.
6. Bananas and milk help to make us .....
7. Bananas are a ..... ..... food for everybody.
8. Be sure the peel of the raw bananas you eat has ..... of .....

BANANA VOCABULARY

| | | |
|---|---|---|
| mashed bananas | dust | health-giving |
| favorite fruit | wise | milk |
| well | brown | hot |
| potato | bananas | flecks |
| banana plantations | strong | banana |
| delicious | germs | missionaries |

In the following sentences the words missing are number words. How many do you know?

1. A large bunch of bananas often weighs ..... pounds.
2. A large bunch has as many as ..... hands.
3. Each hand has from ..... to ..... fingers.
4. Each banana plant bears ..... bunch of bananas.
5. The banana boat is usually unloaded in ..... day.
6. ..... ..... men are needed to unload the boat in one day.
7. There are enough bananas in one boat to fill ..... freight cars.
8. The price of bananas today is ..... cents a dozen.

In the meantime the children's banana books were growing. Copies of the broadcasts were given to each child. In addition many independent activities such as drawing illustrations for their books, making posters and writing rhymes and banana advertisements were carried on. The unit ended with a banana party.

One of the most important outcomes of this unit was the reaction in the home. The mothers became interested and gave valuable cooperation as the work proceeded. One little girl, with her mother's assistance, prepared and gave a broadcast describing many new banana recipes that a third grade child could use.

Much of our buying is governed by advertising. The many advertisements from newspapers and magazines brought in by the children showed their keen interest along this line. Through this interest, a discriminating appreciation and recognition of the values of different foods was aroused, especially of the banana. In addition to realizing the immediate health aim the children's interest in books, especially on travel, was greatly increased. Their ability to use books as a source of information was also an important result.

The unit provided opportunity for various types of reading: supervised silent reading when the children were reading in books or when a group was preparing to read a broadcast, and oral reading during the period in which the children were using their copies of the broadcast for discussion of the subject. Oral reading featured again as audience reading when the broadcast was being given. As careful planning was necessary for a successful broadcast the children gained considerable experience in organization.

E. M. HOLWAY,
Farragut School,
Boston, Mass.

## A RURAL SCHOOL PROJECT IN OKLAHOMA

A CLASS of college girls in community health and hygiene at Oklahoma Agricultural and Mechanical College, Stillwater, Okla., selected a rural community a few miles from Stillwater as a fertile field for teaching health.

In this district is a one room school, with seventeen children, eleven girls and six boys, ranging in age from 6 to 13 years. The district is small and poor, and because of lack of funds for maintenance, the school building and grounds were in an unattractive and insanitary condition. The students scored the school according to the Oklahoma model school score card and out of a possible 1,000 points, this rural school scored 576. The building lacked paint, the roof leaked, window panes were out, window frames needed repairing, plaster was broken around windows and in other places and ceilings and walls were dirty and dingy. The windows, floor and desks were dirty and disorderly. Even the teacher's desk was littered with papers. She had no place to put her own possessions because the children had not learned order and system in putting things away in their cupboards. There was no thermometer in the room and no good way of washing hands.

The children in the school were able to enumerate all the things that could be done to make the school a better place. Forty items were listed. Of this number the students were able to accomplish twenty-eight of the most essential things during the school year. The county superintendent and the teacher at the rural school heartily cooperated with the students.

The students first outlined their procedure. They planned a community meeting to launch their program. All the parents of the children in the school and the school board attended. A special program was arranged. The county superintendent and a rural educator from the college gave brief talks on health and showed slides of progress in rural schools in the country.

After the meeting the students from the college began the practice of weighing and measuring the children once a month. This practice was continued throughout the school year. After the first weighing they found that there were, according to the average weights for children, 5 children between 10 and 15 per cent underweight, 6 children between 5 and 10 per cent underweight and two children between 1 and 5 per cent underweight.

Four were healthy looking and their weights and heights corresponded with averages for their ages. Those children who were 10 to 15 per cent underweight according to averages had all the signs of children lacking good health. They were not bright and alert in their classes and they lacked vitality.

By means of weekly lessons which each student in turn taught, the children learned to want good health as well as a good school. The results were gratifying. During the first month every child in the school gained in weight from

½ pound to 6 pounds. There were many problems about milk drinking and sleeping long enough at night but these were soon solved.

Of the children who were 10 to 15 per cent underweight, all gained from 5 to 14 pounds. The 14 year old girl who was 15 pounds underweight, according to averages, gained 14 pounds and also showed the greatest gains in appearance and in interest and ability in her school work. The gains in weight, made consistently throughout the school year, ranged from 3 to 14 pounds. All physical defects among the children were corrected. Eyes were examined and glasses fitted if needed; teeth were examined, filled, cleaned and extracted if necessary and infected tonsils and adenoids were removed. By the end of the year the children were all in good physical condition.

That the school lunch is a factor in promoting the health of these children was evidenced in April when the serving of a hot food at noon was discontinued. The children all lost weight. Discontinuing the hot food at noon is a common practice in rural schools as soon as the weather becomes warm. Just as soon as the loss in weight was discovered, the college students suggested that the hot lunch should be continued for the remainder of the year. When all other conditions remained the same and the hot food was served again, the children began again to gain in weight.

Much work yet remains to be done in the community and another class of girls will promote it this year. Other schools in rural districts nearby have heard of the work at the school and have asked to have our students help them.

EDITH H. MACARTHUR,
Stillwater, Okla.

## REACHING THE PARENTS

AS TEACHER of the second, third and fourth grades in a rather backward rural section, I hope to see my health lessons reflected in the increased health and happiness of each child. I knew that my first and greatest problem was reaching and instructing parents and enlisting their aid.

At the first of the year I wrote to each child's parents telling them my general health objectives for the year and asking them for cooperation. I sent to each home two sets of health habits that each child should form. I asked them to check the habits that the child had already formed and to send the set back to me. They were to keep the other set as a guide in helping the child form the habits he had not developed.

I formed a circulating health library of my copies of HYGEIA, clippings, stories, books and plays. The children were eager to carry these home as there was a dearth of reading matter in nearly all the homes.

Each month the children planned a health program of plays, songs, poems and talks, to which the parents were invited. We made these programs so colorful, instructive and interesting that attendance rapidly increased. At the end of the children's program I gave a short talk outlining our activities for the next month.

Daily morning inspection became part of the routine and health reports were sent home each month. Our health roll of honor was read during our program.

We made posters at different times and at the end of school a poster contest was held. Prizes were given for the best posters and the children made short talks about the different posters.

At this meeting I presented some interesting statistics. The number of absences due to sickness and the types of illnesses were reported. I

gave the height and weight of each child at the beginning of the school year and at the close. In graph form I showed the general health of each child and the general health of the room.

Last of all, the list of health habits that had been checked at the beginning of the year was rechecked by pupil, teacher and parents, and the actual gain in health habits for the year was determined. Nearly every child scored 100 per cent. The rating for parents was equally high for at this last meeting each child had one or both parents present.

MARGUERITE DIGBY,
Greer, S. C.

## NEW HEALTH BOOKS AND TEACHERS' MATERIALS

THE increasing demand for sound and interesting courses in health education in colleges is reflected in an excellent text, "Fundamentals of Health,"[1] by authors who have close contact with youth in college classes. Too frequently in our graded schools emphasis is placed on well standardized precepts with superficial reference to biologic sanction for certain prescribed behavior. This plan when adopted in colleges has invariably resulted in apathy and boredom for the study of hygiene. This new book deals with some things that have proved to be of interest to college youth. It includes such materials as the genesis of life, the phenomena of reproduction, heredity, growth and development, and nervous and emotional adjustments. This text is primarily on personal hygiene with only one of the fourteen chapters on public health. It is written in terse vigorous English. It tells the college student those things that he most wishes to know and treats the problems of personal hygiene with frankness and in a wholesome spirit. It should have a wide use in schools of college grade.

SCHOOL clubs are no longer mere experiments in public school education. They have proved their worth and have now become firmly established in some form or other in our schools. Yet few teachers have had access to well organized literature on the subject that would tell them about the fundamental values that may be achieved through such organizations or how they might be carried on in the most efficient way. Prof. H. D. Meyer has brought together in this small volume, "The School Club Program,"[2] the results of a broad and intelligent observation on school clubs. Personal and public health clubs are among those considered.

IT IS necessary only to give interesting books, such as "Our Environment, Its Relation to Us,"[3] "Our Environment, How We Adapt Ourselves to It,"[4] "Our Environment, How We Use and Control it"[5] and "Science Discovery Books I, II, III,"[6] a cursory examination to realize that they have set new standards and possibilities for the teaching of general science in the junior high school. They represent a remarkable achievement in scholarship and pedagogy. On every page they bear evidence that the authors have tried out their material in the schoolroom with success.

The three volumes cover the field of general science for grades seven, eight and nine in language the pupil can understand. Mechanically the books are above the average. The print is large and the illustrations are attractive and help to make the teaching more effective. The experiments, things to do and opportunities for the pupils to respond to the facts presented in the texts, are so numerous that the teacher will have a broad latitude of choice. The regular textbook of this series as well as the work books, science discovery books, that are planned to accompany the regular instruction lend themselves to the promotion of a scientific spirit. The pupils will be led to base their conclusions on well authenticated facts.

The authors have not forgotten that boys and girls should take a scientific attitude toward problems of health. Pupils are introduced to personal, home and public hygiene in such a fashion that with this preparation they should enter the high school well prepared for an advanced course in physiology and health.

EVER since John Dewey presented that notable essay on education called "School and Society," an interest in sociology has been growing among educators. Finally the term "socializing the child," meaning the bringing of such influence to bear upon him that he may become an efficient member of society, began to be current. This newer point of view has colored much of our teaching. With the growth of the mental hygiene movement the necessity of proper social adjustments of individuals has become even clearer. The recognition of the social values in education has made it desirable that educational sociology should be introduced into our teaching-training institutions.

Dr. Smith presents a readable book, "The Principles of Educational Sociology,"[7] that should do much to widen the social horizon of the teacher. Although he has missed many opportunities of indicating how the child grows up socially and its value in education and life, several of the chapters, particularly the chapter on educational guidance, have definite suggestions for mental health.

POPULAR interest in health education is again reflected in two new health books for the upper grades. Dr. Walters has a scientific and educational point of view that has made it possible for him to present to teachers two helpful books.

The first volume, "Our Journey of Growth,"[8] attempts to make use of a natural interest in children, to give them an insight into the vital factors affecting their growth and finally to guide their habits in such a way that positive health may result. This book would probably fit into a fifth grade.

The second volume "Our Health Foundations"[9] covers about the same ground except that it is more advanced and has some definite physiology.

The print of the books is large and pleasing. The illustrations are mostly drawings and some of them are rather crude. Both books are open to a serious criticism in that there are notes for the teacher at the end of the chapter that might better have gone into a manual to accompany the series. For example, in volume II, chapter XI is on the "Hygiene of the Heart and Blood Tubes." There is more than a page of material at the end of the chapter in fine print under the caption "Health Work in School and Home." This not only tells the teacher just how to take a child's pulse but also the signs of a diseased heart. Such material should not appear in a book for children. It is unfortunate also from the point of view of getting the child's interest that so much of the content of these books seems to be lacking in concrete incidents connected with the lives of children and the great pioneers of hygiene.

1. By Kirkpatrick, T. Bruce, and Huettner, Alfred F. P. 576. Boston: Ginn and Company, 1931.

2. By Meyer, Harold D. P. 178. New York: A. S. Barnes, 1932.

3. By Carpenter, Harry A., and Wood, George C. P. 234. New York: Allyn and Bacon, 1928.

4. By Carpenter, Harry A., and Wood, George C. P. 391. New York: Allyn and Bacon, 1928.

5. By Wood, George C., and Carpenter, Harry A. P. 704. Price, $1.80. New York: Allyn and Bacon, 1931.

6. By Wood and Carpenter based on the foregoing texts.

7. By Smith, Walter Robinson. P. 773. Boston: Houghton Mifflin Company, 1928.

8. By Walters, Francis M. Pp. 251. Boston: D. C. Heath and Company, 1931.

9. By Walters, Francis M. P. 276. Boston: D. C. Heath and Company, 1931.

# New Books on Health

## LIVING THE LIVER DIET

By Miner, Elmer A., M.D. Price, $1.50. Pp. 106. St. Louis: C. V. Mosby Company, 1931.

NUMEROUS patients with pernicious anemia have to feed on diets with large amounts of liver or to receive various preparations of liver that are now available. In general, it has been shown that liver is an excellent source of important materials for bodily health and for disturbances of the blood in general. Diets have been calculated for patients with pernicious anemia that provide the essentials of all well balanced diets and include, as well, the necessary administration of liver. The author himself has been a patient with pernicious anemia and he has used the liver diet. He has made his notes with the advice of Dr. William P. Murphy of the Minot Clinic and with the advice of Dr. Charles A. Elliott and Dr. Paul Starr of Chicago, under whose care he was for some time. His book provides information that is bound to be useful to any patient with pernicious anemia who wants to live on a liver diet satisfactorily.

MORRIS FISHBEIN, M.D.

## CONQUERING ARTHRITIS

By Margolis, H. M., M.D. Price, $2. Pp. 192. New York: The Macmillan Company, 1931.

THIS book, written for the patient who has arthritis, makes an especial appeal to the rheumatic person who, because of the duration of his illness, has become discouraged and is prone to go from one physician to another, finally to land under the care of the irregular practitioner such as the chiropractor, osteopath or faith healer.

The author believes that it is advisable to put in the hands of the rheumatic patient such data as will teach him to understand his condition and to know what can and what cannot be done for him at the present time.

The author divides the subject into the history of arthritic disease; the general problem of rheumatic disease; the various types of chronic arthritis; the possible sources of infection of chronic arthritis; the structure of bones and joints; the life cycle, pathology and course of infectious arthritis; arthritis confined to the spine, called spondylitis; muscular rheumatism and neuritis; rheumatic fever, and the treatment of arthritis which has numerous subdivisions, including rest and exercise, diets, medicine, treatment of foci of infection, physical therapy in its various forms, vaccine, orthopedic treatment, climatic treatment and surgical treatment.

The book does not supply a guide to self-treatment. It is intended primarily for the general reader. To the arthritic patient nothing looms so large as the fear of being crippled by the disease. New knowledge has brought new gains to the arthritic patient if he is ready and willing to receive them. Complete faith in the judgment of the doctor is the essential tie between the patient and the physician.

There are no short cuts to the cure of arthritis. Even when under the care of a competent physician and under the most favorable treatment, the patient is likely to feel that benefit from treatment is too slow; at this moment he is ready to be ensnared by any one of the number of quacks lying in wait just around the corner. A temporary relapse may shatter all the confidence the physician has won if the patient is not on his guard. Once converted to the cult, the patient loses all that might have been gained had the former treatment been adhered to with courage.

Frequently the treatment of arthritis imposes economic hardships and emotional conflicts that the patient finds difficulty in overcoming. These obstacles must be surmounted. An attitude of optimism is necessary. The patient with arthritis can learn profitably from those afflicted with tuberculosis. A certain dogged determination to fight the disease, combined with optimism, has created heroes of men who would otherwise have succumbed to that disease.

Careful evaluation of clinical records by competent authorities who have large experience in the treatment of chronic arthritis reveals encouraging facts, that from 75 per cent to 90 per cent of patients with chronic arthritis may be helped either to complete recovery or to definite improvement. Approximately 25 per cent have been found to recover completely.

The impression that arthritis is an incurable disease must be revised. There is indeed much reason to hope for the patient with chronic arthritis. The road to recovery may be long and tedious. It is often slippery but it is one that must be taken with confidence. Effort and faithfulness in the treatment of arthritis have been frequently well rewarded.

When I allowed one of my most intelligent arthritic patients to read this book and asked her for comments, she said: "It is a very interesting book. It is clear, adequate, educational, encouraging and inspiring."

The book is easily read and the information therein contained should be of value to the patient with arthritis.

PHILIP LEWIN, M.D.

## ALLERGY AND APPLIED IMMUNOLOGY

By Vaughan, Warren T., M.D. Price, $4.50. Pp. 359. St. Louis: C. V. Mosby Company, 1931.

THIS volume was prepared primarily as a handbook to answer the questions of patients, but it is also a manual for physicians in a field of science that has been developed largely within the last decade. The allergic diseases include hay fever, asthma, eczema, various forms of swellings, headache, disturbance of digestion, sensitivity to foods, some kinds of epilepsy and acute inflammation of the bowels.

Dr. Vaughan explains the nature of allergy and of the substances to which human beings may be sensitive, responding with the various types of disease that have been mentioned. He then considers diagnosis, particularly by means of the skin tests, and the treatment based on the nature of the condition. Following comes a discussion of the possible relief or cure of the patient and of the symptoms of the various forms of disease induced by allergic reaction. The final section of the book is devoted to a consideration of biologic therapy in chronic infections.

The book seems somewhat too scientific in its development for any patients except those with a college education. Since, however, the allergic population is tremendous it should not lack for numerous intelligent readers.

M. F.

# QUESTIONS and ANSWERS

### Chorea in Children

*To the Editor:*—Please inform me of the latest and most authentic procedure used in the treatment of chorea in children.

G. W., South Dakota.

*Answer.*—There is no "authentic procedure" in the treatment of chorea, or St. Vitus' dance, in children. A number of new drugs have been tried in the past few years without significant success. Fever therapy is promising but by no means yet proved the best procedure. The most important requisite is complete rest. Usually this is best accomplished in a room alone.

Various devices to secure the patient against falling from bed or striking head or limbs against solid parts of the bed are most important aids to sleep. Usually an arrangement of extra pillows held down by the lower sheet is sufficient. Years of experience have brought confidence in the use of arsenic in various forms. Sedatives are necessary in acutely disturbed cases.

Tonsillectomy is frequently beneficial.

### Discolored Toe Nails

*To the Editor:*—Three months ago the nails of my big toes suddenly became black. The toes were not bruised and I was told that I had diabetes. I immediately stopped eating anything sweet. I was later informed that the condition was not due to diabetes and that diabetes does not affect the toes. The nails now are almost white. What was the cause of the discoloration?

E. D. S., Tennessee.

*Answer.*—The nails may blacken as the result of exposure to certain chemicals or of injury such as might result from pressure or a blow. In the latter instance, there is a hemorrhage in the tissues of the nail bed, which is responsible for the color; as this gradually becomes absorbed the normal color returns.

Nutritional disturbances at the base of the nail or parasitic infections of the nail itself may alter the color, but they do not turn it actually black. A dark-brown or blue-black color of the nail may result from the growth of a pigmented tumor beneath the nail. This is usually progressive and is unilateral.

In this case, if there had been no salves or other preparations applied to the feet or nails, it is probable that the transitory discoloration resulted from pressure of ill-fitting shoes, which might occur without the patient's knowledge of actual injury, causing a hemorrhage in the tissues of the nail bed.

### Electric Prostatic Heater

*To the Editor:*—Will you kindly advise me as to the value of the enclosed advertised heater in a case of inflammation of the prostate gland.

B. M. C., District of Columbia.

*Answer.*—A recognized authority in urology replies as follows:

"This instrument has been in use for the last four or five years and is merely localized application to the prostatic region from the rectal side of the type of heat that one gets from an electric pad. The instrument has definite merit, although the effects of its use are, as a rule, merely palliative.

"I have tried these instruments repeatedly for the last two years, but find that the effect of heat so induced is much less than that which can be obtained by diathermy or even by a frequent application of hot rectal irrigations.

"If the prostate is acutely inflamed, without hypertrophy or new growth, any type of heat applied to that region will be of benefit."

### Eye and Ear Learning

*To the Editor:*—I have been informed that the eye is an approximate percentage faster than the ear in acquiring information; that children especially gain quicker knowledge of things by seeing them than by hearing of them or by reading about them. Can you inform me on this subject?

W. C. B., Illinois.

*Answer.*—This question opens up a vast and interesting field in which the modern educator has been working for a generation.

There is a great difference in the speed of light and of sound in air. Is there a similar difference in the body? It takes sound about five seconds to travel a mile, while light is almost instantaneous. Sound travels about 1,000 feet a second, 100 feet in one tenth of a second and 10 feet in one hundredth of a second; so that as far as gaining knowledge in a schoolroom is concerned, not an appreciable amount of time elapses between the spoken word and the arrival of the impulse at the ear drum. The time required to translate vibrations of sound into nerve impulses is infinitesimal, as is also the time required to translate light waves into nerve impulses.

As to the actual speed of impulse transmission over a nerve, authors agree in general. In an octopus the rate is 2 meters a second, in a lobster 6 meters a second and in a frog at room temperature from 28 to 30 meters a second; in a human motor nerve it is nearly 120 meters per second (Howell's Physiology). For one meter it would be a one hundred twentieth of a second and for a fraction of that it would be correspondingly less. So that in the transmission of impulses for the purpose of this discussion, the speed is entirely negligible.

The time necessary for the consciousness to become cognizant of a nerve impulse varies greatly with many factors: (1) with the state of health; (2) with the attention, and (3) with previous experience in the subject. Individuals differ and one person will show a greater aptitude for some sensations than for others.

What the questioner has in mind is undoubtedly the fact that we gain a greater amount of information through the eyes than through the ears. This idea is based on fundamental differences that one may illustrate. Through the eye one perceives form, size, color, distance, speed, relationships and direction, all instantaneously. It is impossible to obtain as much information orally without laboriously building a word picture. With a child the difficulty is still greater, owing to his limited vocabulary.

Some day educators may provide a more rapid means of communication than our present method of speech, a sort of oral short-hand.

*If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.*

### Gray Hair

*To the Editor:*—Is the amount of gray hair likely to be increased as a result of having one permanent wave a year by an experienced operator? Is there any scientific basis for the belief that gray hair is the result of insufficient iron in the system? If so, could the condition be improved by the use of foods recommended for their iron content? Can the increase of the number of gray hairs be prevented by the use of cod liver oil as a means of improving the vitality?

F. P. F., Massachusetts.

*Answer.*—One permanent wave a year would probably have no effect on the color of the hair. It does, however, cause the hair shafts to break.

There is no proved connection between the amount of iron in the system and the color of the hair, and it is probable that cod liver oil will be of no service in preventing grayness. It might serve a useful purpose if the general nutrition is below par. Even then it would probably have no effect on the color.

### Dentifrices

*To the Editor:*—Is common salt a satisfactory dentifrice? What about bicarbonate of soda? How do these products compare with the popular brands of tooth paste and tooth powder?

H. B., Iowa.

*Answer.*—Unfortunately there have been no tests published that enable one to know even the relative cleansing properties of the tooth pastes or tooth powders on the market. Most of the tooth pastes have as their principal abrasive either calcium carbonate or tricalcium phosphate, to which are sometimes added salt, sodium perborate and a long list of other substances. Tooth pastes are essentially the same as tooth powders, but they have been made into paste form by the addition of glycerin and excipients such as tragacanth. Those tooth pastes that contain tricalcium phosphate are unduly abrasive.

Medicinal agents added to tooth pastes have been so added under an erroneous impression that the tooth pastes or the tooth powders can be used as a means of medication, but this view is no longer generally held by competent dental authorities. The use of a dentifrice is limited to whatever cleansing properties it may have. The work of the council on dental therapeutics of the American Dental Association is intended to stamp out the quackery in dental advertising.

There appears to be no authentic record of the use of either salt or baking soda as dentifrices. However, both of these materials have been suggested from time to time as tooth powders. When used in this way they probably owe any cleansing properties they may possess to their detergency. It is probable that when these substances are introduced into the mouth in solid form, there is a reflex action on the salivary glands, causing the outpouring of saliva to neutralize any irritant effects produced on the mouth tissue.

Because of the absence of relative tests to determine the advantage of an insoluble material like chalk or a soluble material like salt and soda, the choice of either depends on the individual taste of the patient. In any event, salt or a mixture of salt and soda as used by the normal person has not been shown to be harmful when used as a dentifrice.

The Oklahoma State Board of Health through its dental division advocates a home-made dentifrice consisting of equal parts of salt, soda and borax, to which a dash of flavoring may be added. If the tooth brush is properly used with these substances, no doubt the effect will be as pleasing as if the more expensive proprietary brands of tooth paste are used. Salt on the gums probably acts in the same way as a dilute salt solution, which is generally advocated as a mouth wash.

If one desires to make a pleasant tasting powder from salt, they may use:

| | |
|---|---|
| Salt ..... | 2 ounces |
| Magnesia, calcined light | ½ ounce |
| Oil of wintergreen..... | 45 drops |
| Oil of peppermint..... | 10 drops |

### Red Meats in Diet

*To the Editor:*—There seems to be considerable discussion regarding the use of red meats, such as steak, after middle age, particularly if one is of sedentary habits. I should appreciate the opinion of HYGEIA regarding this.

H. W. S., Minnesota.

*Answer.*—There is a good deal of unproved talk about red meats in the diet. Little scientific evidence exists regarding their value or their dangers. As far as the interpretation of the known facts is concerned, the attitude toward red meats after middle age must be the same as the general attitude toward all foods. Middle age is the time for moderation in all things. Excess of food and drink and of exercise are likely to be harmful. There is practically no proof that the moderate use of red meat is any more harmful than the moderate use of oatmeal or bananas or any other article of food. This assumes that the person is in normal health.

An interesting article on the subject by Dr. Solomon Strouse entitled "Food Habits and Long Life" appeared in HYGEIA for June, 1929.

### Endocarditis

*To the Editor:*—Please tell me something of endocarditis caused by a pneumococcus infection, type 4, in the blood. The case about which I am concerned has been in progress about six months in a man 43 years of age. Is it ever curable? Some of the organs, such as liver and kidneys, seem to be affected.

E. M., Nebraska.

*Answer.*—Some cases of acute simple endocarditis caused by the pneumococcus have a complete recovery with normal cardiac function restored. Others apparently recover, but later evidence of valvular trouble appears. Involvement of the liver and kidneys makes the outlook serious in the case described.

### Desquamation in Scarlet Fever

*To the Editor:*—In teaching the subject of communicable diseases we find it difficult to combat the old theory that the most infectious stage of scarlet fever is when the patient is desquamating.

M. K. H., Pennsylvania.

*Answer.*—In the case of scarlet fever, desquamation, or peeling, in itself plays no part in the transmission of the disease. This is true because the peeling that may take place in scarlet fever is the result of an inflammatory condition of the skin (a rash) that has been produced by the scarlet fever toxin.

The organism responsible for scarlet fever customarily lodges in the nose and throat, or may appear in the discharges from an ear or gland (cervical adenitis). These scarlet fever organisms produce the toxin that is absorbed and enters the various tissues of the body including the skin where the inflammatory reaction takes place. Consequently, since the organisms themselves are not in the skin or are not directly concerned with the desquamative process, the disease cannot be transmitted from particles of epidermis that contain no organism. It is, of course, possible for the desquamating epithelia, especially on the hands, to become contaminated with the discharges from the nose, mouth or ear, unless care is exercised.

Therefore, the mere fact that the patient is desquamating does not in any sense signify that scarlet fever is especially contagious at that time, since the disease is caused by scarlet fever organisms and not scarlet fever toxin. The foregoing truths have frequently been demonstrated in contagious disease hospitals throughout the world. The transmissibility of scarlet fever is similar to that of diphtheria, as diphtheria is not acquired from diphtheria toxin but from diphtheria organisms.

### Subnormal Child

*To the Editor:*—I have a little boy, 4 years old, who was injured at birth. He does not talk and is not as intelligent as he should be. The doctors have advised me to place him in an institution for subnormal children. They say a great deal can be done for him. Can you tell me any books I can get that will help me in teaching him? I should like to try to teach him before I send him away. It will be financially impossible to send him to a private institution and will take a while to place him in a state institution.

S. C., Florida.

*Answer.*—The recognized authority to whom this question was submitted recommends the following books, which can be obtained from Brentano's: "The Psychology of the Preschool Child" by Baldwin and Stecher and "The Physiological Method of Teaching the Feebleminded" by Seguin.

At Gainesville, Fla., there is a farm colony for epileptic and feebleminded persons. Inquiry at this institution may yield information in regard to other places that would be more acceptable for the boy. An institution at Jefferson, Wis., known as St. Colilta's, might receive the boy. The charge there is $35 a month.

### Nervous Sensations When Awakening

*To the Editor:*—For many years, on taking a nap, usually after a meal, I experience the following sensation in my sleep. I suddenly become aware that I am asleep and desire to open my eyes and arise, which I find that I am unable to do. If I struggle to arouse myself, I feel a grinding sensation in my head. The more I struggle, the greater the grinding. I then become seized with a dreadful fear that I should be unable to arouse myself in the event a member of my family would enter my room to awaken me. I remain in this state until my eyes finally open, and then find myself utterly exhausted. This occurs only when I sleep lying down and not in a sitting position. I am 27 years old, slightly constipated, but otherwise in perfect health. I weigh 135 pounds and am 5 feet 8 inches tall. Thus far I have never been disturbed by any one while in this condition. Would sudden awakening on being aroused by some one while in this condition cause shock? What is your opinion of this case?

S. R. S., New York.

*Answer.*—In the first place the question is rather contradictory in that the writer states that he suddenly becomes aware that he is asleep and that he is unable to open his eyes; in making this statement he must be conscious of the fact, and being conscious of this effort, he cannot be asleep.

The most important part of the statement is the confession of a dreadful fear in connection with the episode, which no doubt has an emotional basis. We do not believe any serious shock can come from being awakened by a member of the family. Our best opinion is that the disturbance is purely a functional disturbance and has no organic basis. We recommend that as little attention as possible be given to this sensation, in the belief that it will eventually disappear.

### Lamp Treatment for Pleurisy

*To the Editor:*—Would you advise the use of a sun lamp in case of pleurisy? Is it harmful to use a sun lamp in a case of active tuberculosis? My doctor says it is, but I understand that treatment at sanatoriums for tuberculous patients consists chiefly of sunbaths. Would you advise the use of a chamois vest?

G. H. P., Idaho.

*Answer.*—We do not advise the use of a sun lamp in the treatment of either pleurisy or tuberculosis. The sun lamp is used in sanatoriums for the tuberculous only in certain cases and then carefully, with accurate temperature checks. Nor do we advise the wearing of a chamois vest in an effort to overcome attacks of pleurisy.

Pleurisy is a condition that should be treated only under the direction of a physician. It is often due to tuberculosis, a condition that can easily be aggravated by ultraviolet radiation.

### Medical Treatment for Absorption of Cataracts

*To the Editor:*—My father has cataracts and would like information on a medical cure that requires no operation. D. B., Illinois.

*Answer.*—The medical treatment for the absorption of cataracts is not at all satisfactory and many of the most careful observers have not been able to substantiate the results claimed for this mode of treatment. Only about one third of all cataracts observed have ever progressed to such a stage that an operation is necessary. Many opacities of the lens do not progress at all. As one cannot predict just what course a beginning cataract will follow, it is difficult to evaluate the effect of treatment.

Four or five drugs have been advocated for the absorption of cataract, but in the present state of knowledge we do not feel justified in asserting that beneficial results would follow the use of any of them. This also refers to the use of protein substances.

### Spinal Anesthesia

*To the Editor:*—Will you kindly give me your opinion of the new anesthetic that is given by spinal injection? I must have my appendix removed, and the physician said he thought he would use spinal injection. Evidently this is a fluid. Is there, by any chance, danger of this fluid remaining in the system and in time causing an irritation that may result in cancer? I watched my father die of cancer, and I have had every booklet you publish on that subject, as I am determined that I shall never allow that disease to get a hold on me if there is any possible chance of avoiding it. That is why I ask that peculiar question about the fluid causing irritation in the system.

A. L., Massachusetts.

*Answer.*—Spinal anesthesia is used frequently and there are certain operations for which it is given by choice.

There is no danger of the solution that is used remaining in the system, and there is no possibility whatever of its causing cancer. This patient can be assured that there is no relation between spinal anesthesia and the development of cancer.

### Chlorine Treatment for Laryngitis

*To the Editor:*—Will you kindly advise me as to whether or not there is any merit to chlorine treatment for laryngitis of five months' standing? If so, where is there a reputable place in New York City to obtain this treatment for laryngitis?

C. W. S., New York.

*Answer.*—Some years ago inhalations of dilute chlorine vapor were used sometimes in cases of acute infection of the upper respiratory tract. The theory was that the chlorine, being a powerful germicidal agent, quickly relieved infection present in the nose and throat. This treatment, in great vogue for a short time, seems to be practically abandoned.

The chlorine is not only germicidal but it is irritating, and it would hardly have a good effect on a laryngitis that has already lasted five months. As a rule, the best treatment in these cases is to avoid the excessive use of the voice, to eliminate highly irritating and highly spiced foods from the diet, and to diminish or abandon the use of alcohol and tobacco.

Whenever hoarseness lasts for some months, one should be suspicious of more serious trouble than a mere laryngitis; therefore a careful examination of the larynx by a specialist is necessary. We do not know at the present moment of any reputable place in New York City at which chlorine treatments are being given.

# In the *Washington Emergency Hospital*— one antiseptic serves three vital uses

**1** *Gargling* 394 nose and throat cases received treatment in the Washington Emergency Hospital last year. In this type of case, Hexylresorcinol Solution S. T. 37 is used by the staff because of its great antiseptic power combined with non-irritating properties.

**2** *Dressings* Hexylresorcinol Solution S. T. 37 is on every dressing carriage in the Washington Emergency Hospital—for use in wet dressings, for cleansing and irrigating wounds. It is powerfully germicidal, yet it causes no pain, is even soothing to wound tissue.

**3** *Operations* 4,083 operations were performed in the Washington Emergency Hospital last year. In all cases Hexylresorcinol Solution S. T. 37 is kept on hand and is used in certain types of cases for application to the wound during operation.

STARTING 60 years ago as an emergency center for the treatment of accidents and injuries, today the Emergency Hospital is one of the largest in the Capital—with 225 nurses and 17 doctors in daily attendance; 100 private rooms and a total number of beds for 280 patients.

Brilliantly staffed . . . splendidly equipped . . . it has a record of 19,251 patients treated last year.

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# Let Him Hear

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MANY a bright child is unjustly blamed for dullness because he cannot hear what his teacher says. She may not know that his hearing is defective.

There are hundreds of thousands of such children in school now. If their ears are neglected, they will probably repeat grades much more often than other children.

Any school equipped with a phonograph audiometer can discover its hard of hearing children, a large proportion of whom can be saved from lifelong deafness provided they receive expert care and attention.

Common colds, especially when involving the nasal sinuses, are a frequent cause of deafness. Noses should be blown gently, or infected mucus may be forced through the tubes into the middle ear and cause deafness.

After an attack of measles, diphtheria, scarlet fever, meningitis or infantile paralysis, the ears should be examined to see if any condition which might cause deafness remains in the tubes leading to the ears. Diseased tonsils, adenoids, or running ears often lead to deafness. Undernourishment may have a definite relation to impairment of hearing.

There are millions of adults in the United States whose ear troubles were neglected in their childhood, or later, and who are now permanently deafened.

Their number cannot be known since many of them are so reticent, so sensitive about their handicap that they make every effort to conceal it.

With increasing deafness, year after year, there often comes to the hard of hearing a feeling that there is a growing barrier — an invisible wall — between themselves and their fellows.

Deafened persons are often persuaded to buy worthless devices and nostrums which do more harm than good. The victims suffer in silence.

However, there are scientifically constructed instruments which amplify sound and do aid impaired hearing. Ear specialists can advise regarding them.

But when all scientific aids to hearing fail, lip reading offers a rescue. It should be an essential part of the education of every child whose hearing is impaired.

Much of the deafness among adults, now incurable, could have been prevented if the cause had been detected and properly treated during childhood.

*For more than 12 years a national service organization has been warning against quack remedies and giving information concerning hearing aids, vocational and employment problems, hearing tests for children and lip reading instruction.*

*It has also assisted in forming local leagues for the deafened which have helped thousands to readjust their lives. Many of these leagues have auditorium earphone sets, amplified radios and demonstrations of standard hearing aids. It is prepared to help those who have few social contacts and who are isolated in small villages and remote places.*

*If you have any sort of hearing problem which you long to talk over with some one who will listen — and understand — write enclosing a self-addressed envelope to the American Federation of Organizations for the Hard of Hearing, Inc., 1537 — 35th Street, N. W., Washington, D. C.*

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## Funicular Pharyngitis

*To the Editor:*—Is there a permanent cure for pharyngitis? On account of a postnasal condition, although I have had my tonsils and adenoids removed and have had a submucous resection, there is a dripping of mucus at the back of my throat practically all the time. Would bicarbonate of soda used three times a day prove injurious? Could the trouble come from loud shrieking in an occasional nightmare?

L. F. H., New York.

*Answer.*—It is difficult to state whether there is any permanent cure of the pharyngitis described, because there are many forms of pharyngitis; some of these respond to treatment and others do not.

Pharyngitis, or inflammation of the membrane of the upper part of the throat, may be caused by infections of the nose such as chronic sinusitis or chronic nasal catarrh. When the secretions drop from the nose into the throat, they naturally irritate the lining membrane of the throat. On the other hand, the pharyngitis may be due to acute infections from contact with persons having the same trouble and, after these attacks have been repeated many times, a chronic condition may arise. It may also be due to the improper use of highly spiced foods, the excessive use of alcohol and tobacco, and speaking in the open air with inhalation of an irritating dust.

When the condition is due to a nasal infection or a chronic nasal catarrh, treatment by a physician will sometimes relieve the matter considerably, but may not lead to a permanent cure because every time the nose is again inflamed the condition may return. On the other hand, when the trouble is due to certain local conditions the inflammation of the throat may often be greatly relieved by avoiding improper food, tobacco and speaking in the open air.

Certain systemic conditions such as a chronic constipation may also produce what is known as a passive congestion of the throat, which will give rise to the symptoms of a pharyngitis. At times an anemia will also produce these changes. It is necessary to have a thorough examination so that various factors that may be present in the general system may be eliminated.

Use of sodium bicarbonate does not prove injurious in any case and often is helpful. A mild paraffin oil dropped into the nose several times a day will often relieve the pharyngitis,

Loud shrieking, as in a nightmare, does not cause chronic pharyngitis.

### *MESMERISM MINUS MESMER*

*(Continued from page 134)*

"Croyez et veuillez" was Barbarin's magic formula—an outlook that is obviously transitional to Christian science, mind cure and Couéism. Gradually, during the nineteenth century the "animist" view gained the upper hand, important stages in its victory being marked by the work of the Frenchman Bertrand in the third and that of the English doctor James Braid in the fifth decade of that century. It was Braid in his "Neurypnology" (1843) who at length gave definite experimental proof that suggestion, an animist factor, was the main force at work in mental healing. It was in consequence of Braid's writings that the term "hypnosis" came into general use to describe the trance-state induced by suggestion, although the general recognition that suggestion itself is the outstanding factor was due to the researches and writings of Liébeault and Bernheim (the Nancy school). Through Charcot's revival of mesmerism or hypnotism at the Salpêtrière and the stimulus this gave to the initiation of psychoanalysis, we come directly to Sigmund Freud, who also studied for a time at Nancy. That is one line of affiliation in the history of mental healing.

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### *WHEN YOU VISIT THE HOSPITAL*

*(Continued from page 129)*

and her nurse-mother had it not been for her interest in watching that flower box. Incidentally, I think both the well girl and the sick one had their love of growing things increased. You should see their gardens now!"

While any flowers are, as a rule, appreciated, those that the patient can watch grow have an added interest. Usually this type of present may be numbered among those gifts that do not make the strain on the pocket book too heavy. Flowers with an oppressive odor should not be taken to hospital rooms.

What is true of flowers is also true of mechanical toys and puzzles. It is not the most elaborate or expensive that is most appreciated. It is well to remember, too, that some amusing toy or clever puzzle is as welcome in the grown person's room as in the child's. I know one man who insists he got more pleasure out of a mechanical bug than from any one of the dozens of presents given to him during convalescence.

---

To cure is the voice of the past. To prevent is the divine whisper of today.—*Kate Douglas Wiggin.*


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**Do your children grow pale in the winter months?**

**The vital energy of sunshine fades out in the winter months, and all nature is affected by the shortened supply of Ultraviolet Rays. Children are affected too; some lose their Summer's glow or ruddy cheeks, look peaked and show in a number of ways a loss of robust vigor.**

**A few minutes radiation regularly with a Hanovia Home Model Alpine Sun Lamp supplies the precious Ultraviolet shut out by dark winter days.**

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## *THE LOW-DOWN ON HIGH BLOOD PRESSURE*

*(Continued from page 116)*

that the worst thing that can happen to the average man is to be deprived of his work. It is often wise to advise an overworked man to cut down his activity by delegating more authority to others and by taking more or less frequent rest periods; but to require the average man with high blood pressure to stop all work is usually to kick the last prop from under him. The medical director of a great life insurance company once told me that policy holders who quit all work on finding they had hypertension did not live nearly so long, as a class, as those who carried on.

To be guarded against, however, are prolonged periods of intense application to work without sufficient rest to compensate. A rest period in the middle of the day, of one-half hour to two hours, helps to keep the pressure at a lower level. Frequent holidays, not too strenuously used, are beneficial. Longer vacations once or several times a year help to prolong life for a victim of hypertension.

To quote my friend Dr. Clendening again, "The treatment of hypertension should be made as nearly painless as possible." Every physician of experience knows that finding high blood pressure does not mean signing a patient's death warrant, for there are numerous persons who have been enjoying reasonably good health and leading active, useful lives for long periods of time—many of them as long as we have been taking blood pressures.

There is no better summary of the treatment of high blood pressure than the advice given by Chauncey Depew toward the end of his long and useful life—"Do anything you want to, but do it in moderation." And this was based on scriptural authority—"Let your moderation be known of all men."

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## EPIDEMICS ARE MAN'S OWN PRODUCT

In the making of epidemics, man is a powerful factor. It is he who spreads disease; it is he who carelessly eats a one-sided and undernourishing diet, gets little exercise, goes from hot dry temperatures to low moist outside temperatures. It is man who lowers his resistance to disease, the *Illinois Health Messenger* maintains.

Colds and pneumonia are particularly good illustrations of diseases that await the invitation of human beings before making an attack.

# *Even the 7th need not die*

ONE out of every seven persons over 35 years of age dies of cancer . . . so statistics indicate. But, helped by x-rays and radium, medical science is steadily gaining in its conquest. Even now the seventh need not die.

Cancer attacks stealthily. In its early stages it is painless. There are often no definite symptoms. Nevertheless, the "runaway cells," uncontrolled in their consuming growth, may be making dangerous inroads upon health.

If cancer is discovered in its *very beginning*, it almost always can be treated and checked successfully. Near the body surface it can usually be detected as a lump or in the form of a persistent, slow-healing sore. But internally these signs cannot be felt or seen. In many cases x-rays offer the only means of detection.

The annual health audit, including x-ray examination, is the best defence against cancer —against any disease. Most disorders can be detected in their earliest stages only in this way.

So make it a practice to go to your family physician at least once a year. By examining you regularly, he can discover the first indication of disorder. With radiographs (x-ray pictures) he can study hidden conditions and make diagnosis positive.

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# . . . If Your HANDS Feel Like "Sandpaper"

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## *TWO TUBS OF "CHINY ASTIES"*

*(Continued from page 128)*

You'll let me know if Margaret gets sick, won't you?"

Mrs. Bracken caught a quick breath and nodded.

"'Bye, then." Miss Jackson was smiling when the plow point pulled the gate back into place.

Driving back to town two hours later Miss Jackson passed the little whitewashed house where Mrs. Bracken's father lived. She had planned to stop for a moment but as she neared the place she saw that Miss Talithy had callers. Mrs. Bracken sat on the porch with her step-mother; and Margaret in a clean gingham dress to which was pinned a large lavender aster bent over to smell the rose-colored flowers, her small hands clasped demurely behind her. Miss Jackson smiled, waved and drove on.

"Been busy today?" Mrs. Anderson asked at dinner from the head of the boarding house table.

"Oh, fairly," Miss Jackson replied.

Old Mr. Pickett chuckled, his small black eyes twinkling above his trim white beard. "Ride 'round all day over the best county in the South, and I'm blessed if you don't call it keepin' busy."

"Just what have you been doing, Miss Jackson? Tell us." Mrs. Anderson liked her boarders to have plenty of conversation with their meals.

"Oh, nothing much."

"Do tell us, Miss Jackson."

"Well, I rounded up some folks for Saturday's clinic, and I gave the mother of a typhoid patient some advice, and I got in some more blows at that polluted spring in the Crooked Creek neighborhood."

"What else?"

"Oh, I don't know. Just odds and ends like interpreting a couple of tubs of Chiny asties and drawing a few comparisons. It's been too hot to do much."

---

## BABIES LEARN SUDDENLY; SKILL FOLLOWS

Babies learn things by suddenly doing them, Dr. Mary Shirley of the department of psychology of the University of Minnesota told psychologists at a meeting of the American Psychological Association recently. The discouraged mother need not worry if her child seems slow, because he will probably give her a sudden surprise.

Skill, not learning, is gradual in children. A child will do something suddenly, but will not do it well at first.


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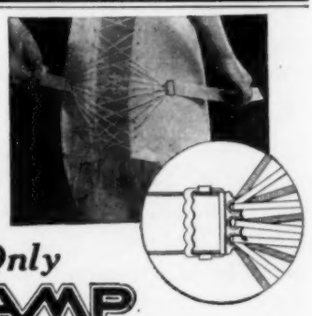
**ENGLEWOOD HOSPITAL** Be a Nurse. Three year course. State accredited. Beautiful nurses' home. Full maintenance and monthly salary. Four year High School course required. For further information, write to Englewood Hospital, 6001 South Green Street, Chicago, Illinois.

**"—AND IN WHAT SCHOOL WERE YOU TRAINED?"**
That is the inevitable question when one applies for a professional position. Nursing is no exception. The standing of the school counts. In arranging the announcements of nurses' training schools, the greatest care has been taken to include only schools connected with hospitals of standing. All hospitals on this page are on the hospital register of the American Medical Association. They provide **"TRAINING THAT COUNTS."**



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## LIGHT EXPOSURE CURES INFANTS OF RICKETS

Three children suffering from moderately severe rickets, which had been previously established during an observation period of from three to four weeks, were cured by daily twelve hour exposure to doses of tungsten-filament radiation. A 500-watt lamp was suspended 5½ feet above the level of the bed on which the three children, one white and two Negroes, lay and were exposed from 7 a. m. to 7 p. m., an article in *The Journal* of the American Medical Association explains.

The babies were dressed in shirt, diaper and booties, which left the head, neck and the greater part of the legs and arms exposed. Goggles were tried the first few days, but were discarded because of the annoyance caused by the moisture that collected beneath them. No discomfort, however, was noticed in the eyes, on the skin or on the mucous membranes.

The Negro infants perspired a great deal more than the white baby, who sweated usually only after having his bottle. This difference was probably caused by the increase in absorption and decrease in reflection of the rays by the skin of the Negro babies.

No erythema was observed at any time although a slight pigmentation developed definitely over the areas exposed to the light.

---

## SCHOOLS MUST FURTHER STREET SAFETY

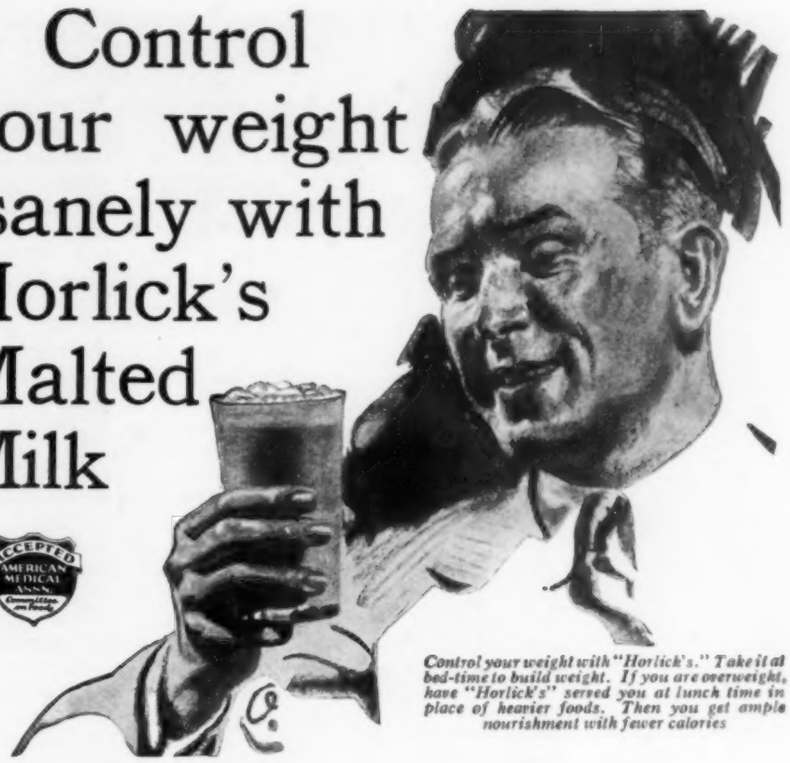
The school can do more toward stimulating safety among children on streets and highways than any adult influence. No child is too young to have training in safety, according to an article in *Child Health*.

The school boy patrol is one of the best ideas of promoting safety at crossings, because the boy not only assumes a definite responsibility but the other children are directed by some one their own age.

"The purpose of the patrol is to instruct, direct and control members of the student body in crossing streets and highways at or near schools. The patrol officer does not control vehicular traffic nor does he enter into the street or highways," the report states.

It is the duty of the parent, the teacher and the police department to cooperate and to put pressure on school-age children which will inculcate habits of safety that will be observed even in adult life. The careful child will become the careful adult.


Control your weight sanely with Horlick's Malted Milk



ACCEPTED AMERICAN MEDICAL ASSN.

*Control your weight with "Horlick's." Take it at bed-time to build weight. If you are overweight, have "Horlick's" served you at lunch time in place of heavier foods. Then you get ample nourishment with fewer calories*

If overweight, take "Horlick's" in place of a heavy meal, to maintain your strength and energy.

If underweight, add Horlick's to your regular meals—use it *often* to get full benefits from its nourishing, building qualities.

The "Sane way to reduce" is by far the safest. Be sure that your reducing diet provides enough nutriment to preserve your health. Horlick's Malted Milk is an aid in a reducing program, as it provides a light lunch, valuable in eliminating faintness and dull headaches due to hunger. You can drink this delicious food-concentrate, obtain the energy you vitally need, and still reduce sanely.

THE ORIGINAL

MALTED MILK

HORLICK'S

*Horlick's Malted Milk Corp., Racine, Wis.*

"*This*
**MEAL PLANNING RACKET**
*is wearing me out!*"

HERE'S a remedy. Choose your meat—and with it serve *bananas*.

Tuck them on the broiler when you treat the family to a steak. It's a rare combination of delicate flavors. Or sauté bananas to a melting brown and serve with roasts and chops. Or broil bananas rolled in bacon for a crisp, crunchy luncheon success.

Is it quick? Bananas cook in "just a minute." Is it inexpensive? You *know* how many bananas a few cents will buy! And you're dishing up real adjuncts to health, remember—vitamins A and C, minerals, champion energy-building values. Further, you're using one of nature's happiest weapons against any tendency towards an acid condition.

**BANANAS COST LESS and GIVE MORE than most OTHER FOODS**

*In recognition of its high food value and easy digestibility, the banana has been awarded the official Seal of Approval of the American Medical Association.*

**FREE BOOK THAT TELLS MORE**

Twenty-four pages of surprising banana dishes. You'll want a copy for the recipes, the menus, the pictures that sparkle through its pages. Do clip the coupon.

**UNITED FRUIT COMPANY BANANAS**

UNITED FRUIT COMPANY H. 2-32
1 Federal St., Boston, Mass.

Please send, free, your latest booklet of recipes and menu suggestions, "The New Banana."

*Name*_____

*Address*_____

*City*_____ *State*_____


## GIRLS GET TRAINING IN HOME MAKING AND HYGIENE

A new angle attached to an old problem has been the work and pleasure of girls in the continuation school of Middlesex County, New Jersey, the education bulletin of that state reports. Seeing the problems of home life as they really appear, rather than as fanciful illusions, the girls have learned many tricks in wise purchasing, saving and financing. Furthermore these girls have been taught how to make things over cleverly, to mend clothing and to make gifts economically.

The health department of the school emphasizes treatment of defects that boys and girls need to have done before going out in the business world. Special attention is given to decayed teeth and faulty mouth hygiene, infected tonsils, adenoids, impaired vision, underweight and poor general condition.

Some idea of how effective this medical treatment has been in carrying over into the home and life of these children may be gained from the fact that these children gave first aid, aided in the care of sick and took younger children to dentists and physicians in more than 600 cases.

## 30 CENTS A DAY—WAGES OF STREET CHILDREN OF EGYPT

When luck plays a part, from 15 to 30 cents a day is earned by hordes of little children of poverty-stricken parents in Alexandria and Cairo, who collect and sell cigaret stubs to the cigaret makers of the native quarters. If their luck is poor, they dare not go home for meals but must beg for their food.

This is merely one of the situations that has resulted from a lack of educational legislation and enforcement. A law of 1925 provides that compulsory elementary education should come into full effect within 20 years. In 1928 so little had been accomplished that 64 per cent of the children between 5 and 15 years were still without educational facilities.

The *Revue Internationale de l' Enfant* recommended recently the speeding up of this law and suggested other wise plans for the future, such as the teaching of trades to children at 9 or 10 years, since legal employment in stores may begin at 9 years, and the creation of a public or private agency to care for neglected children.

Happiness lies first of all in health.—*George William Curtis.*


**SAFETY EDUCATION MAGAZINE**

**For teachers and pupils**

***$1.00 a Year***

Supplies you with safety material throughout the school year—lesson plans, stories, plays, informational articles and colored poster supplement.

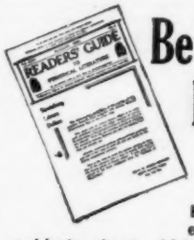
**ONE PARK AVE., NEW YORK CITY**

**THUMB-SUCKING STOPPED . . . the new way!**

In most cases it is no longer necessary to enclose a child's thumbs in uncomfortable metal cages. Child specialists now recommend Bite-X ($1.00 *per bottle, postage prepaid*). Simply apply Bite-X to the tips of the thumbs or fingers. It instantly forms a coating—adhesive, transparent and unpalatable. . . . Perfectly harmless. Also a tested cure for nail-biting. Satisfactory results or money back. *Remit $1.00 direct to*

*Dept. 62*

**CHILD WELFARE GUILD, Inc.**
468 4th Ave., New York

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To locate the best articles upon any subject or to find stories by your favorite authors consult the **READERS' GUIDE TO PERIODICAL LITERATURE** in your nearest Public, College or School library. It is a monthly index to the contents of 116 general magazines including

**HYGEIA**

The librarian will be glad to show you how easy it is to use.

The library will probably have just the magazines you wish, new or old. If not, we can supply them promptly and reasonably.

*Periodicals Department*

**THE H. W. WILSON COMPANY**
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## CARE OF MINOR DEFECT MAY PREVENT BLINDNESS

Simple methods of eye protection may mean the saving of sight in one or both eyes. Blindness is dreaded by nearly every one, yet many persons neglect to treat slight injuries to the eyes that may become serious and result in blindness.

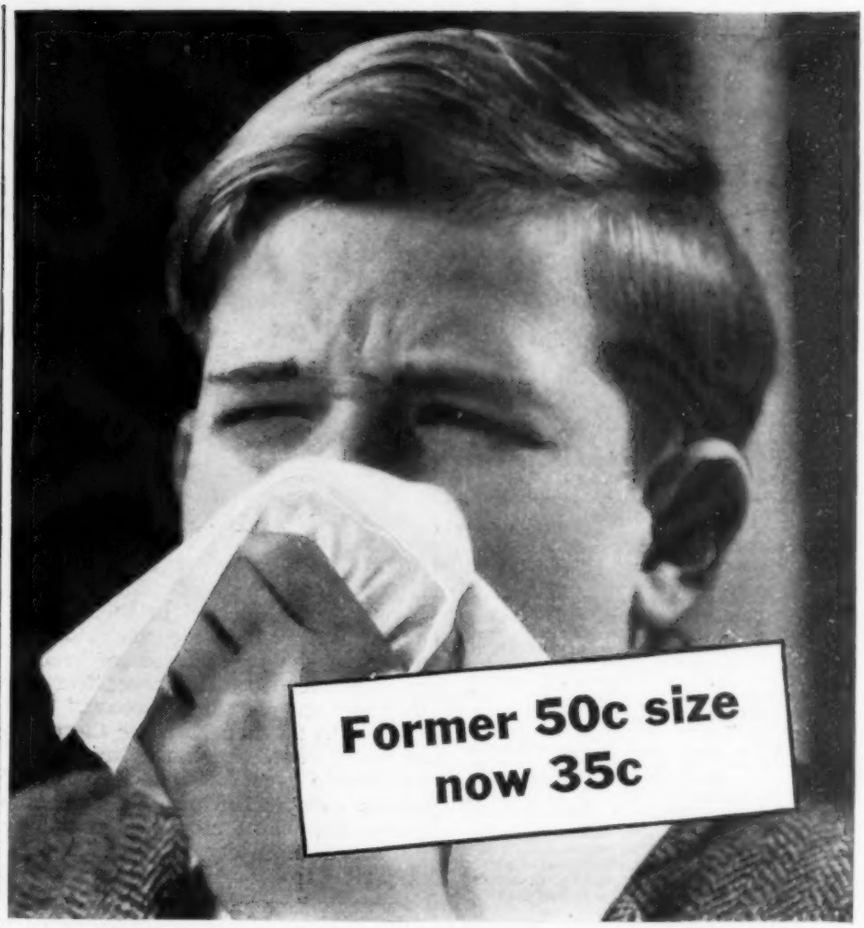
Several wise suggestions are given in an article, "Protecting the Eyes," in a recent issue of *Pennsylvania's Health.*

When an eye is injured by a blow of some kind, ice water or ice wrapped in a clean cloth should be applied as soon as possible. Never, under any circumstance, should hot water or other applications be applied to the eyes, except on direct orders from a physician. Even then the use of hot water is rare except when pannus results. Poultices of any kind should never be applied to the eye, because they aid in the multiplication of germs that may destroy the sight. No solution other than water or boric acid solution should be applied, unless under a physician's orders. Do not let barbers drop solutions in the eyes.

Dr. Harold B. Wood, author of the article, suggests in addition the following precautions:

"Cinders, dust or other small particles which blow into the eyes should be removed promptly. They may be washed out with cold water, or by gently pulling the upper lid down over the lower these small foreign bodies may sometimes be dislodged. If these attempts will not remove the speck, and if a physician or nurse cannot conveniently be found, it may be necessary to have somebody else remove the cinder. In such case a soft piece of cotton or the corner of a clean handkerchief which has been wet in water, and not wet by spittle, may be used. Whatever it is, it must be clean, soft and wet. Under no circumstances should a match or toothpick be used to remove a cinder. . . . Any small particle which gets into the eye from an emery-wheel or comes with some force from some industrial activity will embed itself deeply and is not easily removed. Persons with such injuries should go at once to a physician."

There is no general cause of blindness any more than there is any general way in which the person is affected. Vision may be impaired in one eye or both; it may produce total or partial blindness. Most causes of blindness are accidental and include those that are due to industry, ophthalmia neonatorum, trachoma and syphilis.


# When children sniffle

## give them KLEENEX for handkerchiefs

**Inexpensive way to prevent self-infection during colds**

WHEN your child starts to sniffle, beware! Nature is warning that a cold is on the way. That cold may hang on all winter... may even develop into a more serious complication if your child uses his handkerchief again and again.

Handkerchiefs are a menace during the "cold" season. They harbor dangerous germs that cause self-infection. Germs that infect others and scatter infection through clothes and laundry bags. The use of Kleenex is the modern inexpensive way to avoid this.

***Use Kleenex and destroy***

Kleenex is the safe, sanitary tissue that now replaces repulsive, soiled handkerchiefs. It's used but once, then destroyed. Germs that live in handkerchiefs and cause self-infection during colds are destroyed, too.

**KLEENEX** *Disposable* TISSUES

Made of rayon-cellulose, Kleenex is far softer than the linen handkerchief. It is far more absorbent, too. You'll find children prefer Kleenex to ordinary soiled handkerchiefs—once they try it.

And think of the economy... of the convenience to you! Kleenex costs less than handkerchief laundering. And there's no washing dirty handkerchiefs!

Try Kleenex for manicuring, for applying medicine. And for removing cold cream, Kleenex has no equal. Its super-absorbency is needed to blot all dirt and make-up from the pores. Sold at all drug, dry goods and department stores. Former 50c size now only 35c.

KLEENEX COMPANY, HY-2
Lake Michigan Building,
Chicago, Ill.

Please send sample packet of Kleenex.

*Name* .....

*Street* .....

*City* ..... *State* .....

*In Canada, address 330 Bay Street, Toronto, Ontario*

***Germ-filled handkerchiefs are a menace to society!***

# *A Letter from Persia*

WE HAVE *secured special permission from Dr. Lichtwardt to publish this letter and have been prompted to do so for the mutual appreciation it should further encourage between the American Doctor and the American Mother.*

AMERICAN HOSPITAL, MESHED, PERSIA
Gerber Products Division Aug. 28, 1931.
Fremont Canning Co.
Gentlemen:

I wish to thank you very much for the "Gerber Babies" which arrived yesterday after a long journey from America. Thanks to your care in packing the pictures all came thru fine, and I already have one hung in my office. It was very kind of you to send them to us.

The Persian baby, when first born is just as attractive and healthy looking as an American child, but in many cases they soon become weak and pale, due to the lack of knowledge of hygiene, sanitation, feeding, child-care, etc., etc. It is estimated that three out of four children die before they reach the age of five.

Vegetables are plentiful and cheap in this land, but unfortunately the parents do not realize their value to children. So instead of giving the one-year-old tomatoes, spinach or carrots, one sees him eating a cucumber just off the vine, skin and all. There is of course much malnutrition and anemia of various sorts. Rickets is surprisingly rare, possibly on account of the prevalent sunshine, but tuberculosis of the glands and bones is distressingly common.

Things however are gradually improving, even in this ancient land, and some parents are learning that to bathe their child before it is a month old, is NOT dangerous—and that smallpox vaccination IS efficacious—and that to give water to a child with fever is not detrimental. I am sure that your products are a real aid in reducing infant mortality and morbidity in America—just as we in this land are trying to make the life of the child longer and healthier.

Yours very cordially,
H. A. Lichtwardt M.D.

*May We Send You a Gerber baby?*
Send 10c for a copy of the original Gerber baby drawing by Dorothy Hope Smith. Also indicate if you would like a free copy of Dr. Storms' booklet "Baby's Vegetables."

*15c at Grocers and Druggists*

*Strained* Peas-Carrots
Vegetable Soup
Prunes-Spinach
Green Beans
Tomatoes

ACCEPTED AMERICAN MEDICAL ASSN.

**Gerber's**
**STRAINED VEGETABLES**

GERBER PRODUCTS DIVISION,
Fremont Canning Company,
Fremont, Mich.

Check items desired:
Baby Picture ☐ Free Booklet ☐

*Name*.....
*Address*.....H-1


## DOCTOR WARNS NATION AGAINST EPIDEMIC DEMORALIZATION

Should relief work that has been employed during prosperous times in combating social sickness be dropped to feed and clothe the unemployed? No, is the answer of Dr. Haven Emerson, writing in a recent issue of *Survey*. To use his own words:

"Certainly not—and if for no reasons other than those of costs and results. The pittance that preventive medicine is costing us, a bare 1 per cent of what we spend for sickness, and the wealth of life, security, comfort of mind and body this investment has brought us, are sufficient reasons to determine our governments in city and county and our volunteer health agencies, national and local, to abate not one jot of their labors for health, nor accept any reduction in their wise demands for adequate budgets devoted to the application of medical sciences to the prevention of material and personal disease."

He asks further whether there is any difference between immunity to disease and freedom from epidemic demoralization. It is even more important now to prevent disease than at any other time. He adds:

"Prevention of social disturbance, of lost balance in community life, of broken families, and of lost faith in fellow man is the burden of the moment which demands a full program of public and private welfare resources."

---

## SPEED AND ENDURANCE OPPOSE EACH OTHER IN DAILY LIFE

In every phase of daily life during the early part of the twentieth century the object seemingly has been to go fast, rather than to last long. The spirit of competition has not only shortened the life of material wealth but of man. The following quotation is taken from a recent issue of the bulletin of the Milwaukee Health Department:

"Every year in this country thousands of men die in the prime of life because they were more anxious to work fast than to live long. Too many men apparently prefer to die young, leaving a large estate, to living ten or twenty years longer with their families in less affluence.

"We are now drawing near to the time of the year when diseases attacking tired-out business men will be on the increase. Very few individuals can have both speed and endurance. Most of us must choose between the two."


**KEEP BABY COVERED**

**Sleep Care-Free**

**USE**
**UNIVERSAL COVER FASTENERS**

This Blanket Fastener will not harm the finest of coverings—simple to attach to bed post as illustrated above. Mail your order today with check or money order. $1.00 post paid. Don't wait.

**Universal Cover Fastener Co., Inc.**
**122 Fifth Avenue New York City**

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**HEALTHY HEADS**
*With the*
**WEEKLY DERBAC Shampoo**

DERBAC, of pure pine tar and cocoanut oils is *more* than a delightful shampoo. It insures hair and scalp health and freedom from infection. FREE: *Full-sized 25c cake to physicians and registered nurses.*

CEREAL SOAPS CO., Inc.
Dept. H-2
334 E. 27th Street
NEW YORK

**Derbac**
**HEALTH SHAMPOO**

---

**THUMB SUCKING**
**Quickly and Safely Stopped by Most Approved Means**

**SAFETY THUMB GUARDS**

*Send $1.75 for a pair with full directions. State Age of child. Satisfaction guaranteed or money refunded.*

**The Safety Thumb-Guard Co.**
**Dept. H, New Haven, Conn.**

---

**A COMFORT LIGHT IN BABY'S ROOM**

A little 2-watt NEON GLOW LAMP will not disturb baby's sleep—but it will enable you to make sure that blankets are tucked in and baby's all right. Leave it lighted every night—current costs only a few cents a month. Lasts thousands of hours. Obtainable at your local electrical dealer. Write for folder. General Electric Vapor Lamp Company, 845 Adams Street, Hoboken, N. J.

## ARTIFICIAL LIGHTING CAN BE APPLIED WITH ADVANTAGE

The best light is sunlight and homes should be planned to obtain as much as possible through windows and doorways. The winter problem is more serious because artificial lighting is sometimes necessary even in the middle of the day. Ideal artificial lighting can be obtained, and Winifred Hathaway, writing in *The Sight-Saving Review*, tells how this may be brought about.

"Several factors must be taken into account in any consideration of illumination. The light must be adapted to the type of work or recreation for which it is needed; there must be an adequate amount of light; glare must be eliminated; the type of lighting should be in harmony with its surroundings, and the illumination should be well distributed."

The author further explains the value of lighting in closets and hallways. A switch to light overhead fixtures is perhaps best in these circumstances. In hallways or stairways a switch should be provided at each end.

"The kitchen is probably the most used room in the house and is usually by far the worst lighted," the author adds. "An unfrosted bulb suspended from a cord causes glare and shadows, two of the most undesirable qualities of bad lighting. The ideal illumination for this room is a totally enclosed ceiling fixture of translucent glass. The size of the lamp within will depend somewhat on the size of the kitchen. A large enough lamp must be used to light every part of the room, and the size of the globe must be determined by the wattage of the lamp. In addition to the overhead lighting it is a great convenience to have side lights at the sink and a light over the stove. These will make for more comfort to the worker, less breakage of dishes and less burned food."

Overhead lighting may be necessary for the reception or the bridge party in the living room, and a large number of reading lamps should be provided, for by its name, the living room suggests its own purpose. Lighting should be made convenient for each member of the family.

In nearly every room of the house, overhead lighting is advisable, even though it is not put to use at all times, the article suggests.

---

Minds of moderate caliber ordinarily condemn everything which is beyond their range.—La Rochefoucauld.

# Their first lesson in health...

## *taught with this "Clean Hands" Game*

YOUNG as he is, this little "play doctor" gives sound advice. And, like a real, honest-to-goodness doctor man—he knows *why* hands must be kept clean.

He learned this vital health lesson himself—with the clever Lifebuoy Wash-up Chart that makes cleanliness a thrilling game. Every wash-up is another goal scored. No wonder all boys and girls like to compete in this health-protecting sport.

### *Makes soap a real friend*

The Lifebuoy Wash-up Chart helps children realize how important it is to wash hands often—*always* before meals. And it provides a lot of fun for a whole month.

Pictures of books, shoes, pets, doorknobs—things everyone *has* to touch—show how disease germs may be picked up by hands. Other pictures show how to rid hands of germs with Lifebuoy, the purifying health soap that gives *extra* protection.

Lifebuoy's big red cake makes loads of creamy, searching lather that removes *germs as well as dirt*. Helps guard against the 27 germ diseases which the Life Extension Institute says may be spread by hands.

### *For new skin beauty*

Lifebuoy wakes up dull complexions. Keeps skin radiantly healthy. Banishes body odor, too. Its pleasant, *extra-clean* scent—that vanishes as you rinse—tells you Lifebuoy *purifies*.

• • •

FREE TO MOTHERS—Solve the daily problem of clean hands. Mail coupon below for free Wash-up Chart and trial-size cake of Lifebuoy for each of your children. Then watch them take to soap and water!

# LIFEBUOY

## HEALTH SOAP

*for face, hands, bath*

free

LEVER BROTHERS CO., Dept. 372, Cambridge, Mass.

Please send me, free, Lifebuoy trial cakes and Wash-up Charts for my _____ children.

*Name* _____

*Address* _____

*City* _____ *State* _____

# In the *March* HYGEIA

GOOD THINGS are in store for readers of the next HYGEIA! As usual its articles are authentic and helpful. And they cover various phases of health of interest to every member of the family, the subjects ranging from how to wean the baby to headache relief. Especially interesting are the serial articles running in HYGEIA just now. Dr. Claude Lillingston continues with "Pioneers of Medicine," which is receiving much favorable comment. And note these, as well!

**"Lincoln and the Doctors"**

THIS CHAPTER of the medical narrative of Lincoln deals with his attack of hypochondriasis following his broken engagement with Mary Todd, and their subsequent reconciliation and marriage. They were brought together again by a doctor who wanted a more complete cure for his hypochondriacal patient. "From now on," writes Dr. Shutes, "Lincoln had something to think about outside himself! Mary Todd Lincoln saw to that!"

**"How Science Helps Solve Crime"**

NUMEROUS ILLUSTRATIONS add to the interest of this article on the identification of firearms in crime detection. The method of procedure is explained by Lt. Col. Calvin Goddard, director of the Scientific Crime Detection Laboratory affiliated with Northwestern University, Chicago. This is one of a series of articles on the various methods used by science in solving crime, a fascinating subject to those who are thrilled by reading how mysterious crimes are solved.

**"The Blood and Its Diseases"**

IN THIS ARTICLE of his series, Dr. Robert A. Kilduffe discusses hemophilia, known as the "bleeding disease," a subject of considerable interest as hemophilia has played its part in the history of more than one nation. Fortunately, it is a comparatively rare disease, but it is "the most hereditary of all hereditary diseases," affecting only males, but being transmitted through their mothers.

**"What Children Put in Their Mouths"**

DR. M. C. MYERSON DISCUSSES not only what children put in their mouths, but why they do so and what should be done when they swallow a foreign body. Such accidents, according to the author, are usually avoidable and are due to carelessness. With suitable instruments now in use, it is possible to remove a foreign body in almost 100 per cent of cases. However, it is much better not to let such accidents occur. Read how they may be avoided!

**Other Articles**

"How Are Your Health Manners?" by Dr. J. Clarence Funk; "Headache Relief," by Solon R. Barber; "Sanitation Goes Modern," by Dr. W. W. Bauer; "Has Your Child a Reading Difficulty?" by Gladys E. H. Hosmer; "Johnny's Stomach," by Dr. Rachel Ash; "Weaning the Baby," by Dr. Joseph H. Marcus; "Heart Murmurs in Children," by Dr. Gustav F. Weinfeld; "Conquering Tuberculosis," by Dr. F. M. Pottenger; and a fascinating new serial for children, "Snickles and Snortles, the Circus Twins," by Nellie G. Herriman, who wrote the popular "Alice in Slumberland." Begin your subscription *now* so you will not miss any of these!

**Introductory Offer**

**6 months of HYGEIA**

**$1**

**REGULAR SUBSCRIPTION, $3 A YEAR**

*AMERICAN MEDICAL ASSOCIATION* H-2-32
*535 N. Dearborn St., Chicago, Ill.*

*Enclosed is one dollar for an introductory 6 months' subscription to HYGEIA, the Health Magazine.*

*Name*.....

*Address*.....

## DENTAL HONOR ROLL SOLVES CHILD'S PROBLEM

That municipalities, no matter how small, should not only have a dental hygiene program but should have a rational program that will do the best good for the greatest number is the sentiment of C. J. Hollister, D.D.S., in a recent article in the bulletin of the Chicago Dental Society. The taxpaying public is not tooth conscious enough to give the amount of money desirable for this work, so some scheme must be found to care for the services in an economical way.

The most economical way generally applied among school children is the use of the dental honor roll. There are more than 225 school districts in Pennsylvania that are using this method, and it has been found to be the most effective means so far conceived. For the last three years the ratio of dental corrections to the contacts made by these people has been 35 per cent. At least 175,000 children have been treated in this way, and no child is counted until he has received full correction, which is indicated by a certificate signed by the operating dentist. Friendly competition and prizes are used as an incentive. Dental honor parades and picnics are held occasionally.

The close contact of the dental hygienist, who is sent to care for each 1,500 pupils, makes the dentist's chair more friendly. She comes in her white uniform and appears before classes to tell stories, give them health lessons concerning their teeth, and stimulate competition between classrooms.

The program is educational. The attempt is mainly to prevent teeth decay and obtain good dental habits.

---

## STOP STEPPING ON GAS; RELAX FOR GOOD HEALTH

"Let's go!" we say. The tempo of American people is a speedy one; "Let's rest" is an unheard of expression. It is an inevitable law that once the brain gets the better of the body, the body breaks, an editorial in *Pennsylvania's Health* points out. We must relax and live.

We "step on the gas" in both business and social affairs. To do rather than to live is the popular psychology.

The editorial ends with the following remarks: "Life is a glorious adventure. And the road is traveled but once. The world is a magnificent place in which to be. Prematurely to sacrifice all this for an habitually unwarranted tax upon the body is sheer foolishness."

*You are the*

CHIEF OF POLICE

EVERY mother is the chief guardian of her child's health. Her duty is to take every precaution to guard against colds, to safeguard against disease and to see the child's food contains those vitamins which build up physical resistance and promote health and growth.

Unfortunately, many children prefer those very foods which are *lacking* in the essential vitamins. These same boys and girls are the ones who catch cold after cold, who are undersized, nervous and irritable, who have no appetite and who have poor teeth. Such conditions should be called to the doctor's attention.

There are five vitamins which are vitally important in the diet of every child. They are Vitamins A, B, C, D, and G. All five of these vitamins can be fed to your little one in one palatable, easily digested combination.

Feed Maltine With Cod Liver Oil daily. Seventy per cent of the combination is Maltine, a concentrated extract of the nourishing elements of malted barley, wheat and oats. The rest is pure, vitamin-tested cod liver oil. Maltine supplies Vitamins B and G. The cod liver oil provides Vitamins A and D. Orange or tomato juice supplies Vitamin C.

Build up your child's health so that he won't catch cold, for colds may lead to more serious illness. Maltine With Cod Liver Oil administered according to your doctor's directions will help you do this. We have supplied thousands of mothers with our booklet, "Those Strange Mysterious Elements in Our Food That Prevent Disease." We want you to have a copy. Address The Maltine Company, 20 Vesey Street, New York, N. Y. (Est. 1875.)

**On the RADIO**—*The Maltine Story Hour every Tuesday afternoon at 5 o'clock (Eastern standard time) over WJZ and associated stations of the N. B. C.*

### *The Vitamin Police*

A "OFFICER A" *is the vitamin essential to normal growth and helps ward off colds and other infections which attack the respiratory system. Maltine With Cod Liver Oil is a rich source of Vitamin A.*

B "OFFICER B (b1)" *is the growth-promoting vitamin which also promotes appetite and prevents certain nervous diseases. Vitamin B (b1) (the Maltine vitamin) is found in abundance in Maltine With Cod Liver Oil.*

G "OFFICER G (b2)" *is the vitamin which does so much to keep the skin clear and free from eruptions. It also helps keep the nerves quiet. It, too, is supplied by Maltine With Cod Liver Oil.*

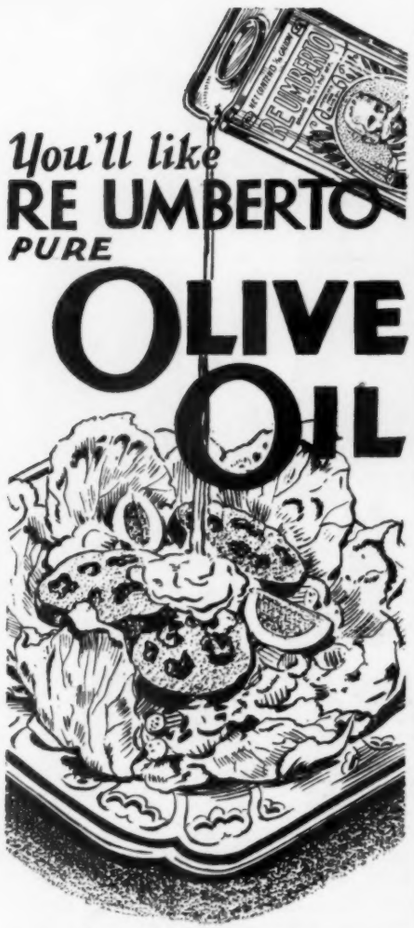
C "OFFICER C" *prevents scurvy. But in children it also plays an important role in protecting and strengthening the teeth. Orange and tomato juice are rich sources of Vitamin C. That's why we recommend that Maltine With Cod Liver Oil be taken with orange or tomato juice.*

D "OFFICER D" *is the "sunshine vitamin." A deficiency in this important vitamin results in weak bones and rickets. Sound teeth depend on it as well. Maltine With Cod Liver Oil furnishes a plentiful supply of Vitamin D.*

# Maltine

WITH COD LIVER OIL

*Accepted by the Council on Pharmacy and Chemistry of the American Medical Association*




IT'S as palatable as it is digestible! *Re Umberto* is a sweet, mild, golden oil pressed from rich, ripe olives grown on the sunny slopes of Spain and Italy. Only oils of the finest quality are blended to make this high grade olive oil. *Re Umberto* is pure enough and mild enough to suit the most delicate palate and the most exacting taste. It is a delightful means of supplying the fat which every diet requires.

## *Try it for Salads!*

Try it in salad dressings. *Re Umberto* adds to the flavor as well as the nutritive value of mayonnaise or French dressing. Use it for deep fat frying or for sauteing. And make your pastries and waffles with *Re Umberto*. Season vegetables with it. Mix sandwich spreads with it. Or even add it to fruit juices and to tomato juice for nourishing drinks. There are so many varied uses for *Re Umberto* in cooking. Try it once and you will find it indispensable in your household!

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*Olive Oil*

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## PRESCHOOL CHILDREN FED AT STATIONS IN PORTO RICO

Feeding stations for children of preschool age were opened for the first time in Porto Rico, the *Puerto Rico School Review* reports in a recent article. This work is being done in addition to the feeding of school children. The preschool organization was established in all urban centers as well as in a considerable number of places in the rural districts.

Not only are thousands of small children saved from starvation and undernourishment, but a sense of fondness and appreciation is kindled for the school they are about to enter.

This preschool service was made possible through two organizations: the A. R. A. Children's Fund, Inc., and the Golden Rule Foundation, which have been instrumental in bringing feeding operations in the country schools where lunchrooms were lacking.

Many schools have added a novelty to the system by providing breakfast for undernourished children in addition to the daily lunch. The teachers and supervisors have already reported better attendance and higher grade of individual work. More than a thousand stations have been opened up on the island. There are sixty-seven municipal feeding schools and 571 rural centers. More than 21,000 children on the island are fed daily out of the A. R. A. Children's Fund.

## ALCOHOL FATALITIES ARE GREATLY REDUCED IN ILLINOIS

The fatalities ascribed to alcohol during 1930 in Illinois not only dropped to the lowest level recorded since 1921, but occurred among men of mature and middle age, the *Illinois Health Messenger* reports. Only 195 deaths were charged against this cause in 1930 whereas 409 died in 1927. Since then the number has declined rapidly and steadily.

Only 12 per cent of these fatalities occurred among persons under 35 years. These statistics tend to show that a large number of older people who feel they have to have alcohol are rapidly passing away, and to prove that the youth is not indulging the appetite for alcohol fatally.

Although this reduction has been associated with the economic depression, the comparison does not hold because that cause could not account for the large reduction between 1927 and 1929.


## A BRIDGE of UNDERSTANDING

*Child Welfare* Magazine bridges the gap between the psychologists and the scholars, who are discovering the fundamental facts of child nature, and parents, who are actively engaged in child rearing.

GONE with bustles, buggies and high bicycles are the days when parents could feed and clothe their children, and, carefree, lay their faults and failures on the Almighty, or on the school.

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## TUBERCULOSIS IN AGED MAY BE HARMFUL TO CHILDREN

The greatest danger of pulmonary tuberculosis in the aged is to the community that does not recognize it as such. The general aspects of tuberculosis in old age differ so from earlier forms that not a few persons have held the notion that tuberculosis does not exist in patients over 45 or 50 years of age.

Scientific investigators have estimated that tuberculous mortality caused 20.8 per cent of the total mortality in those over 50. Higher figures have been found, the *Hoosier Health Herald* points out.

"Tuberculosis when it attacks lungs already damaged by the degenerations of age may add little to the discomfort of the individual who is already short of breath and wheezy. The increasing infirmity of the patient is accepted as a sign that he is aging more rapidly, and no suspicion of any added mischief is aroused. Yet, the aged bronchitic individual may be producing sputum loaded with tubercle bacilli," the *Health Herald* explains.

"The treatment of tuberculosis in the aged consists largely in teaching them how to prevent the spread of their disease. It is not necessary or desirable to make any radical change in their mode of living. It is common knowledge that the aged do not tolerate absolute bed confinement. Such confinement promotes toxemia and hastens death."

X-ray and sputum examinations are the two most valuable procedures in diagnosis. The latter will reveal whether or not the person has an open case and is dangerous to those with whom he is associated, especially children.

## CHEMISTS DISCOVER NEW CLEANSER, SODIUM METASILICATE

A new cleanser, sodium metasilicate, has been found by chemists of the American Chemical Society to be valuable in washing operations, particularly those in which grease must be removed from glass. It has the highest alkalinity of any washing compound except common lye, but is less harmful since it does not break glass, aluminum, tin and zinc as lye does.

It is proving successful in the commercial washing of milk bottles. Unlike soap it has no vegetable or animal matter in its manufacture and yields more suds than soap and water alone would produce. It contains no poisonous elements, but materials may be ruined if the cleanser is not dissolved before use.

behind your front teeth

This picture shows how Tek's precise brush-head sweeps behind the front teeth. You can see that the curve of your thumb and forefinger is practically the same as the dental arch. In this simple way you can prove Tek's Better Shape. With this same free brushing, it cleans every surface and every crevice. Tek is a decided value. Its price is as low as even ordinary brushes. Of course it is sterilized, Cellophane-sealed and guaranteed. Tek Jr. for children.

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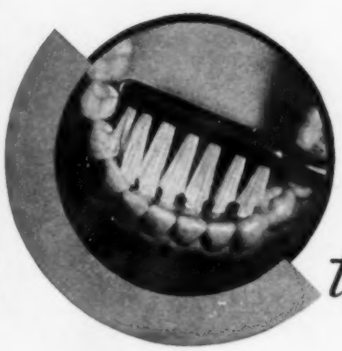

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# *How long have you been drinking* TOMATO JUICE... and why?

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VAN CAMP'S *new-type* TOMATO JUICE sets a new high standard of excellence in the food markets of America—a standard quickly recognized by all. A single trial will show you the high quality of Van Camp's Tomato Juice—a scientific achievement in the art of food manufacture.

But how long have you been drinking tomato juice—and why? Large scale commercial production of tomato juice is very recent—an answer to a public demand. This demand was created by the same scientific studies of human nutrition which have, *in the last few years*, increased the consumption of milk, fruits and vegetables—the "protective" foods—by great amounts.

### *What is* PROTECTIVE DIET?

MILK, fruits and vegetables have been shown to be such essential elements of a complete diet that they have been called the "protective foods." Easy digestibility also has been established as one important consideration in nutrition, because it favors high utilization of food values.

Van Camp's PUREED Foods are scientifically selected and prepared for normal diets at all ages because of their protective food values. The easy digestibility of the PUREED form favors high utilization of all nutrient factors. Mineral salts and natural vitamins normal to each of the raw materials used are retained to the maximum degree. The vegetable fibres are reduced to a smooth consistency, supplying a desirable bulk without roughage.

Van Camp's PUREED Foods make it simple and practical to bring normal diets to the standards set by our newer knowledge of nutrition. Sherman's excellent advice to "first of all, provide an adequate supply of milk, vegetables and fruits, after which breadstuffs, meats, fats and sweets may be added according to taste, purse, energy requirement and individual digestive powers" is easy to practice every month in the year with Van Camp's PUREED Foods—which are palatable, nutritious and uniform in all seasons.

And Van Camp's PUREED Foods also meet the pertinent observation by Alvarez that "many of us seem quite to have lost sight of one of the most important factors in a diet, and that is its digestibility."

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PRUNES • APRICOTS

nutritious and easy to digest—*IDEAL* for *INFANT FEEDING* and smooth diets

And why tomato juice? Because it has been shown to be a rich source of Vitamin C. Its other important food values are easily duplicated in other foodstuffs. But it is one of the richest sources of Vitamin C—approximately the equal of orange juice. And it is clear that the human body uses to great advantage quantities of Vitamin C considerably larger than are necessary merely to protect against disease.

Van Camp's Tomato Juice is carefully prepared to preserve for you every day in the year the harvest-time excellence of color, flavor, aroma and nutritional values. It is the judgment of Van Camp's Research and Control Laboratories, after scientific tests, that approximately 90 percent of the Vitamin C value normal to tomatoes is conserved for you at the time of consumption under average market conditions.

### *Try this convincing test*

Just press out the juice of a fresh, choice tomato—season it slightly with salt—and compare it critically with Van Camp's Tomato Juice as you pour it from the can. If you *like* tomatoes, you'll then ask for nothing finer than Van Camp's Tomato Juice. If you must—for your own pleasure—modify the natural tomato flavor—then make your own tomato cocktail—or other preparation. Van Camp's supplies you with the real essential—nature's own result. Packed only in tins—because that is most economical and because scientific reports show that preservation in tin cans cannot be improved upon by any method.

Try Van Camp's new-type Tomato Juice. Your test will tell you best.

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